



**U.S. Army  
Environmental  
Center**

**FINAL**

**BIOTA SAMPLING  
WOODBIDGE RESEARCH FACILITY**

**WOODBIDGE RESEARCH FACILITY, VIRGINIA**

**AUGUST 1995**

**Prepared For:**

**U.S. Army Environmental Center  
Aberdeen Proving Ground, Maryland 21010**

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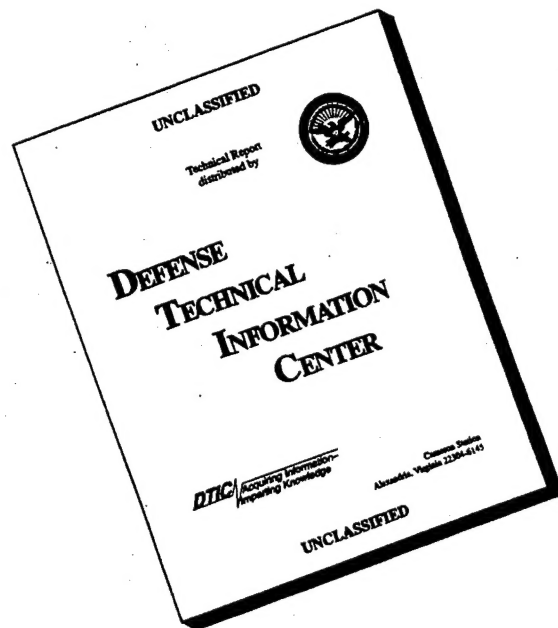
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# SECTION 1.0

## INTRODUCTION

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**T**he U.S. Army Environmental Center (USAEC), Aberdeen Proving Ground, Maryland, directed EARTH TECH to complete a biota sampling at the Woodbridge Research Facility (WRF) installation. This sampling was conducted as part of the U.S. Army Installation Restoration Program (IRP) with all specific activities and project responsibilities as defined in contract number DAAA15-91-D-0009, Delivery Order 0014. Project-specific administration and technical supervision of this delivery order are provided by USAEC-Base Closure Division.

A Site Inspection (SI) was conducted to characterize and evaluate potentially contaminated sites at WRF. The SI identified several data gaps which included the lack of information on potential human health risks from the consumption of fish and on the potential for contaminants found at the study areas to impact aquatic life.

EARTH TECH was contracted to collect, store, and deliver biota samples from the waters on and surrounding WRF. The samples will be analyzed and included in a risk assessment under a separate contract. Guidance documents from the Virginia Department of Environmental Quality (VDEQ) were followed to conduct this sampling (VDEQ, 1994).

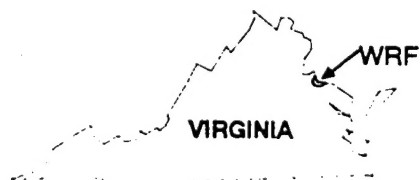
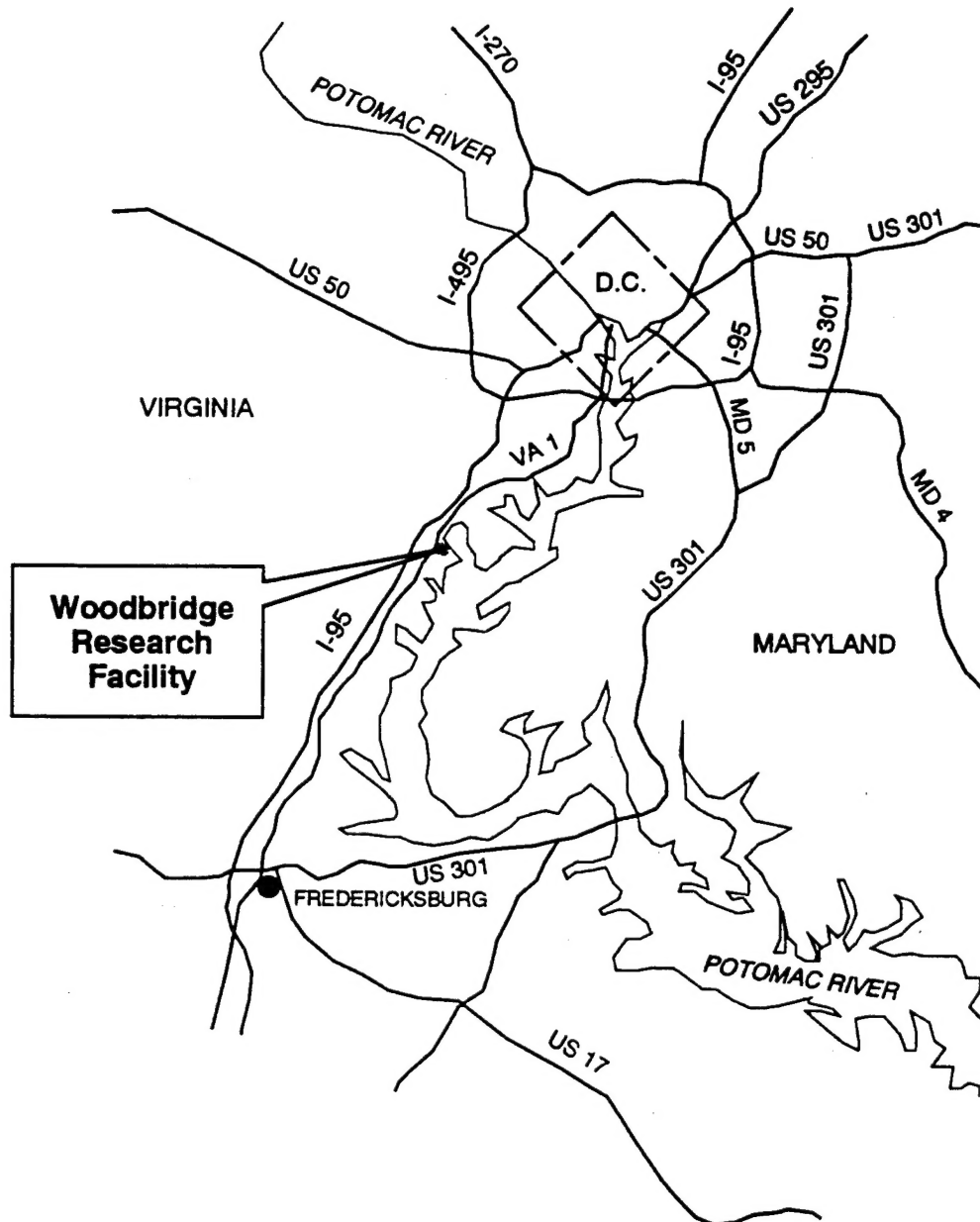
WRF occupies approximately 579 acres of land in the town of Woodbridge in the easternmost portion of Prince William County, Virginia. The facility is located 22 miles southwest of Washington, D.C., as shown in Figure 1-1. Occoquan and Belmont Bays border WRF on the south and east respectively. Marumsco Creek, which is part of Marumsco National Wildlife Refuge, bounds the facility on the west side. Other surface features on the WRF property include a drainage ditch and a pond. The entrance to WRF is located on Dawson Beach Road, east of U.S. Route 1 in Woodbridge. Residential, commercial, and industrial areas are located north of the WRF. A facility location map is provided as Figure 1-2.

The biota sampling included fish sampling at 3 locations and live clam box sampling at 8 locations on and surrounding WRF (Figure 1-3). The fish samples were collected with nets, seines, and electro-fishing gear. The fish samples were collected from 8 November 1994 through 10 November 1994. The live clam box sampling was conducted from 10 October 1994 to 6 December 1994. All samples have been stored since the time of collection at -20°C.

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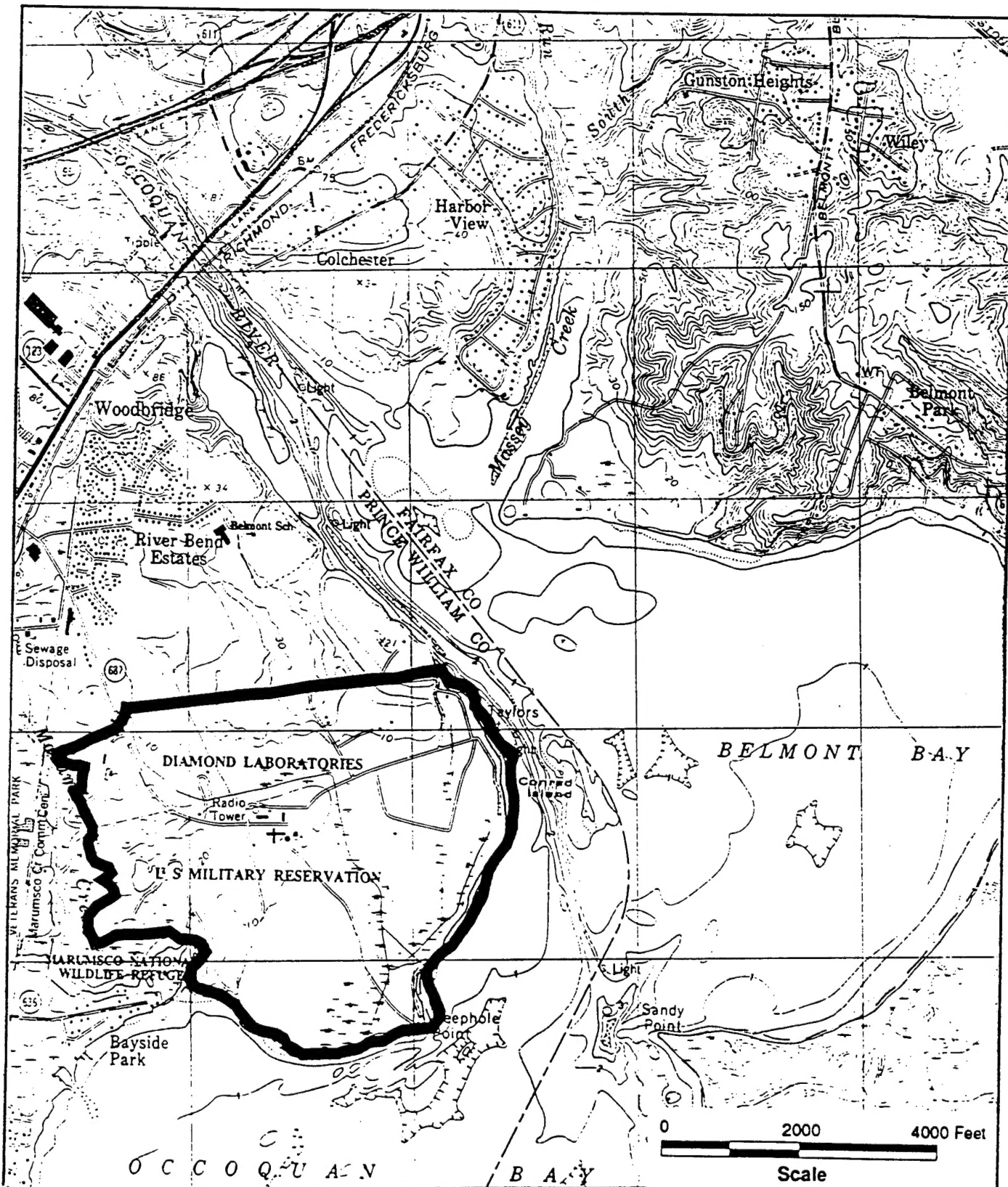
**FIGURE 1-1**

**LOCATION MAP  
WOODBRIDGE RESEARCH FACILITY  
WOODBRIDGE, VIRGINIA**

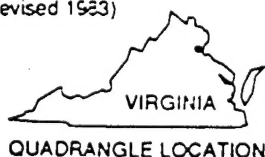
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SOURCE: USGS Fort Belvoir 7.5' Quadrangle, Virginia  
(1965, photorevised 1923)



931976 LOCATION MAP



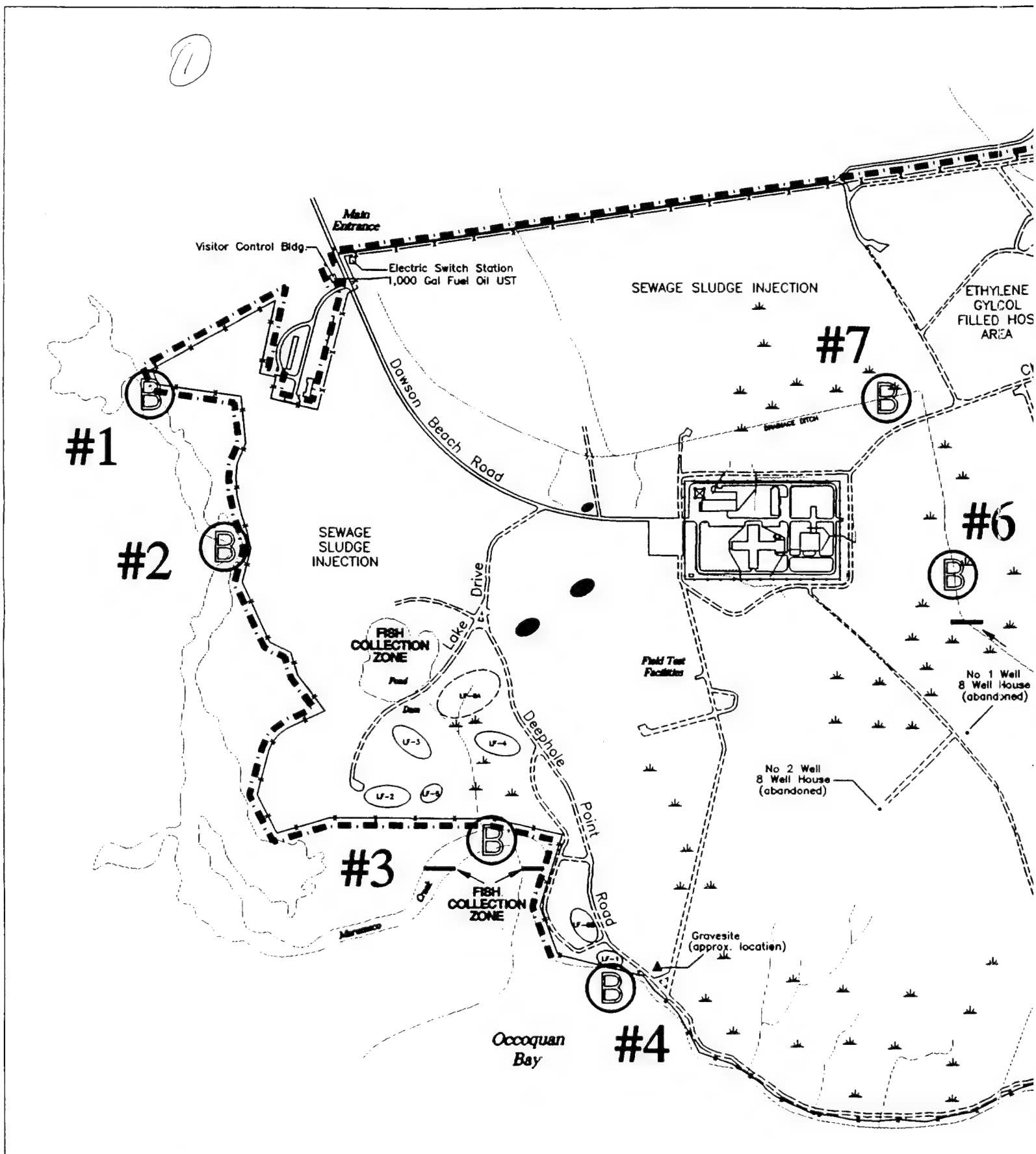
FIGURE 1-2

WOODBIDGE RESEARCH  
FACILITY  
LOCATION MAP

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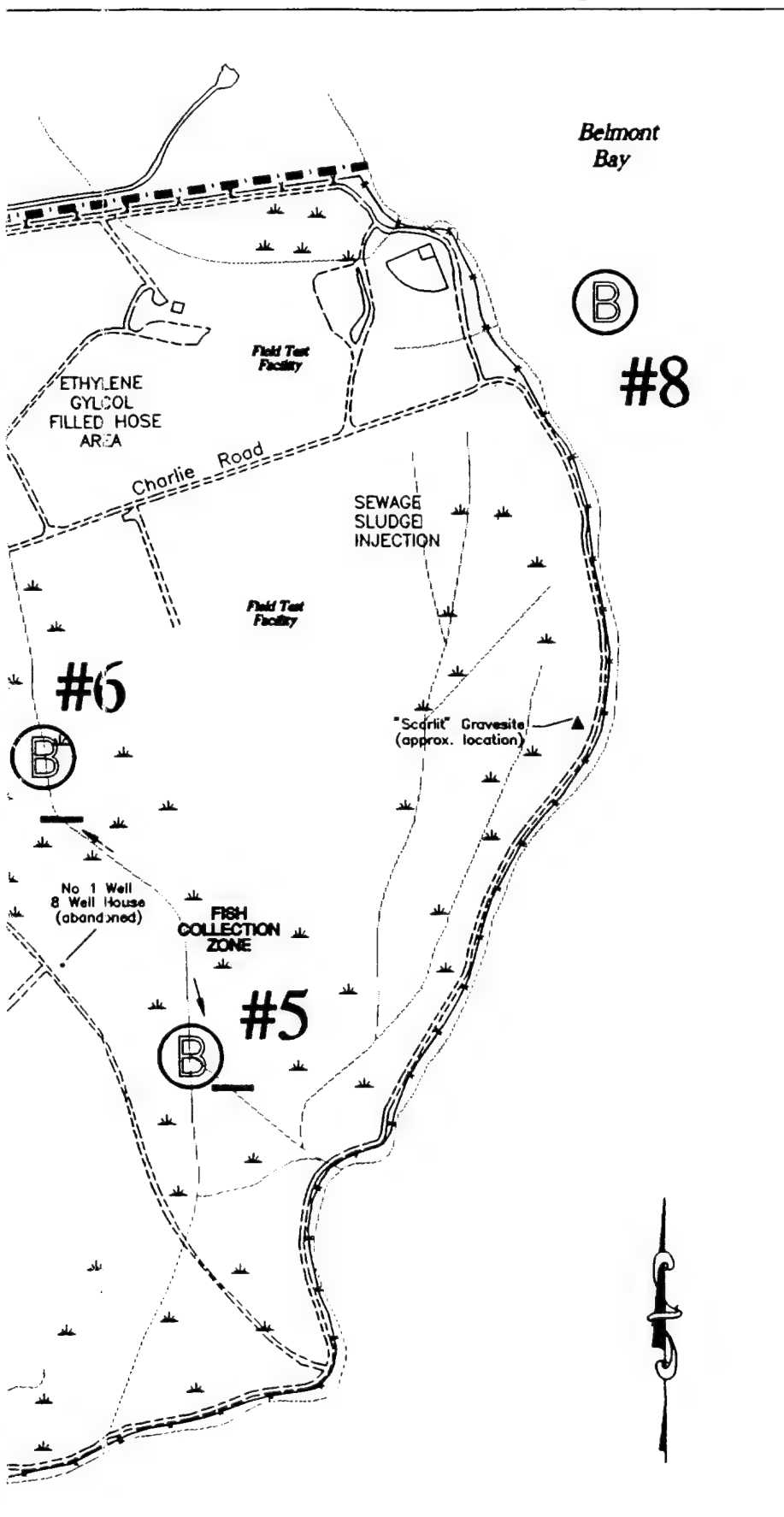
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(2)



### LEGEND



Clam Live Box  
Pair Location



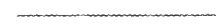
Former Dump



Spill Areas



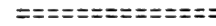
Installation Boundary



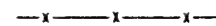
Hydrography



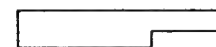
Paved Road



Unpaved Road



Fence



Structure

SCALE

0 700 FT

## Figure 1-3

Blota Sampling Locations  
Woodbridge Research Facility  
Woodbridge, Virginia

E A R T H



T E C

Alexandria, Virginia

3

### LEGEND



Clam Live Box  
Pair Location



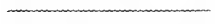
Former Dump



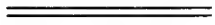
Spill Areas



Installation Boundary



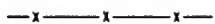
Hydrography



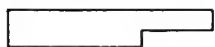
Paved Road



Unpaved Road



Fence



Structure

SCALE

0 700 FT

## Figure 1-3

**Biota Sampling Locations  
Woodbridge Research Facility  
Woodbridge, Virginia**

E A R T H



T E C H

Alexandria, Virginia

Page 1-4

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The methods of collection, processing, and storage for each of these activities will be described in this report. Location descriptions will also be provided. Field notes and a photo log are provided in Appendices A and B, respectively.

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## SECTION 2.0

# LIVE CLAM BOX SAMPLING

---

**T**his section provides the purpose, location descriptions, and sampling procedures for the live clam boxes.

### 2.1 PURPOSE AND DESCRIPTION OF SAMPLING

Live boxes containing wedge clams (*Rangia cunneata*) were deployed in 8 locations on and surrounding WRF. Two live boxes were placed in each location on 10 October 1994. Boxes were sampled every two weeks for 8 weeks. Each live box contained 250 clams. The clams were obtained from Dr. Eugene Maurakis, Director of St. Paul's College Aquaculture Program.

The purpose of the sampling to provide biota tissue for analysis of contaminants of concern. The locations were selected to assess background bioconcentration potentials and bioconcentration potentials in areas potentially impacted by WRF areas requiring environmental evaluation (AREEs). Live box tissue contaminant data can be used, in conjunction with indigenous tissue sample contaminant data, in the risk assessment analyses to determine the human health risk associated with the consumption of fish and shellfish.

### 2.2 LOCATION DESCRIPTIONS

The 16 live boxes were deployed in 8 locations. These locations are listed below and are shown on Figure 1-3.

1. Marumsco Creek, upstream of WRF
2. Marumsco Creek, adjacent to the western sewage sludge injection area
3. Marumsco Creek near Former Dump 2
4. Occoquan Bay near Former Dump 1
5. Drainage Ditch just upstream of the Occoquan Bay
6. Drainage Ditch downstream of the Main Compound in the area known as the beaver pond
7. Drainage Ditch upstream of the Main Compound
8. Belmont Bay, 150 feet from the shoreline.

Each of the locations is shown in Appendix B, the photo log.

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### 2.3 SAMPLE COLLECTION, PROCESSING, AND STORAGE PROCEDURES

Live boxes were sampled every two weeks. Prior to deployment, 40 clams were collected as a control sample. At each sample collection event, the dead clams were removed and shucked. The tissue was wrapped in aluminum foil, dull side toward the sample, placed in heavy duty freezer bags, and frozen at -20°C. Twenty live clams were collected from each box, if practical. In some cases, only 10 live clams were collected due to high mortality rates. Table 2-1 provides the sample collection summary from each live box at all 8 locations. Live clams were wrapped with the shell in aluminum foil, dull side toward the sample, placed in heavy duty freezer bags, and frozen at -20°C. The clams from each box at a location per sampling event were composited into one sample. The samples were labeled with the date, sample location, and status of the clams (live or dead). Aquatic Systems Corporation (ASC) personnel assisted in sample preparation and recovery. ASC personnel transported the preserved samples to the ASC laboratory for temporary storage. The samples were delivered to ESE via Federal Express in May 1995. A copy of the Federal Express airbill along with copies of the chain-of-custody forms which accompanied the biota samples is contained in Appendix D.

The following parameters were determined in the field at each location during each sampling event.

- Dissolved Oxygen
- Temperature
- pH
- Conductivity
- Hardness

These parameters are reported in Table 2-2.

**TABLE 2-1**  
**SUMMARY OF CLAM SAMPLING**

Location	Live Box	Initial Count	Sampling Period: October 24 - October 25				Sampling Period: November 7			
			Number Dead	Number Live	Number Sampled	Number Remaining	Number Dead	Number Live	Number Sampled	Number Remaining
1	A	256	170	86	10	76	55	21	10	11
1	B	242	169	73	10	63	29	34	10	24
2	A	253	198	55	10	45	1	44	10	34
2	B	250	6	244	20	224	4	220	20	200
3	A	260	22	238	20	218	4	214	20	194
3	B	273	35	238	20	218	2	216	20	196
4	A	246	33	213	20	193	1	192	20	172
4	B	248	37	211	20	191	3	188	20	168
5	A	247	180	67	10	57	3	54	10	44
5	B	247	62	185	20	165	4	161	20	141
6	A	250	226	24	10	14	12	2 <sup>(1)</sup>	0	0
6	B	250	191	59	10	49	23	26 <sup>(1)</sup>	10	18
7	A	250	250	0	0	0	0	0	0	0
7	B	250	250	0	0	0	0	0	0	0
8	A	246	84	162	20	142	12	130	20	110
8	B	248	119	129	20	109	11	98	20	78

**TABLE 2-1  
SUMMARY OF CLAM SAMPLING**

Continued

Location	Live Box	Number Remaining <sup>(1)</sup>	Sampling Period: November 21 - November 22				Sampling Period: December 5 - December 6			
			Number Dead	Number Live	Number Sampled	Number Remaining	Number Dead	Number Live	Number Sampled	Number Remaining <sup>(4)</sup>
1	A	11	9	2	2 <sup>(2)</sup>	0	0	0	0	0
1	B	24	14	10	10 <sup>(2)</sup>	0	0	0	0	0
2	A	34	4	30	10	20	3	17	17	0
2	B	200	20	180	20	160	9	151	20	131
3	A	194	1	193	20	173	0	173	20	153
3	B	196	1	195	20	175	1	174	20	154
4	A	172	1	171	20	151	0	151	20	131
4	B	168	1	167	20	147	1	146	20	126
5	A	44	1	43	20	23	2	21	21	0
5	B	141	2	139	20	119	6	113	20	93
6	A	0	0	0	0	0	0	0	0	0
6	B	18	15	3	3	0	0	0	0	0
7	A	0	0	0	0	0	0	0	0	0
7	B	0	0	0	0	0	0	0	0	0
8	A	110	0	110	20	90	0	90	20	70
8	B	78	1	77	20	57	1	56	20	36

(1) The 2 live clams remaining in basket "A" at Location 6 after the dead clams were collected during the second sampling period (November 7) were added to basket "B" due to the 2 remaining live clams in basket "A" not having enough tissue for a sample.

(2) The live clams collected during the third sampling period (November 21 - November 22) at Location 1 from baskets "A" and "B" were combined into one sample due to not enough tissue for 2 separate samples.

(3) Number remaining refers to number remaining after second sampling period (November 7).

(4) Clams remaining after fourth sampling period (December 5 - December 6) were considered waste.



**TABLE 2-2**  
**WATER QUALITY DATA**

October 9, 1994

Location	Temperature (°C)	pH	Cond	D.O.	Hardness	Time
1	17.8	5.5	240	6.4	60	1230
2	20.7	6.6	270	9.4	100	1320
3	21.5	7.8	270	11.1	80	1440
4	20.9	7.5	300	10.8	100	1415
5	23.0	6.1	260	8.6	100	1750
6	19.9	5.7	130	8.1	40	1650
7	19.9	5.5	130	5.2	20	1625
8	20.6	7.7	250	9.6	80	1840
Clam Holding Area	19.7	7.5	260	10.5	100	1100

October 24-25, 1994

Location	Temperature (°C)	pH	Cond	D.O.	Hardness	Time
1	16.8	6.3	160	4.1	80	1535
2	18.5	6.5	160	7.4	60	1450
3	18.5	6.9	210	10.6	100	1420
4	18.0	7.6	220	12.2	100	1400
5	13.0	5.7	240	5.6	100	0900
6	14.5	6.0	130	6.7	60	1035
7	16.5	5.3	120	1.0	40	0940
8	18.0	7.5	240	12.6	120	1249

November 7-8, 1994

Location	Temperature (°C)	pH	Cond	D.O.	Hardness	Time
1	14.0	6.0	220	6.5	80	1430
2	16.0	6.0	240	7.1	60	1400
3	16.0	6.4	380	9.4	120	1300
4	16.0	7.5	430	10.5	120	1225
5	17.0	6.3	320	11.3	100	1630
6	17.0	6.1	180	4.1	40	1535
7	8.0	5.1	140	2.8	40	0830
8	15.0	6.8	340	11.7	120	1130
Pond	14.0	4.7	50	9.4	20	0845

**TABLE 2-2**  
**WATER QUALITY DATA**

November 21-22, 1994

Location	Temperature (°C)	pH	Cond	D.O.	Hardness	Time
1	14.0	6.2	120	6.9	80	1545
2	14.0	6.1	80	6.8	60	1620
3	13.0	6.1	140	8.8	100	1500
4	13.0	6.6	200	10.6	140	1430
5	10.0	6.3	520	8.3	120	0910
6	11.0	6.1	380	8.4	100	0930
7	9.5	5.3	180	3.1	60	0920
8	12.0	6.8	500	10.3	120	0830

December 5-6, 1994

Location	Temperature (°C)	pH	Cond	D.O.	Hardness	Time
1	15.0	6.0	200	7.2	100	1615
2	14.0	5.75	180	6.5	60	1600
3	14.0	5.6	290	7.9	80	1425
4	13.0	5.5	300	7.8	100	1410
5	10.5	6.5	940	8.5	240	0905
6	10.5	5.4	230	5.4	--	1520
7	14.0	5.1	140	7.5	--	1530
8	10.0	6.7	900	10.6	240	0830

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## SECTION 3.0

# FISH COLLECTION

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**T**his section provides the purpose, location descriptions, and sampling procedures for the fish collection.

### 3.1 PURPOSE AND DESCRIPTION OF FISH COLLECTION

The objective of studying contaminant levels in indigenous fish tissues is to assess risk associated with the ingestion of contaminated tissues. Sampling of indigenous fish tissues provides data for determining a reasonable maximum exposure value for use in risk assessment algorithms.

Fish were collected from 3 locations on and surrounding WRF. The fish collection was conducted from 8 November 1994 through 10 November 1994. A fishing permit, Permit No. SCP94116, was obtained on 31 October 1994 (see Appendix D). Collection focused on bottom oriented fish, pelagic fish, and game fish. U.S. Environmental Protection Agency (USEPA) guidance on fish sampling and analysis recommends that the smallest fish in the sample be no less than 75 percent of the length of the largest fish in the sample. Samples that did not meet the size requirements were released.

### 3.2 LOCATION DESCRIPTIONS

Fish were collected from the lower portions of Marumsco Creek, the drainage ditch downstream from the Main Compound, and the pond. Locations are shown on Figure 1-3 and in Appendix B, the photo log.

### 3.3 SAMPLE COLLECTION, PROCESSING, AND STORAGE PROCEDURES

Samples were collected at all 3 locations over the three day period. The fish were collected using electro-fishing, gill netting, and seining. Five individuals per species were allowed per location. If individuals of a certain species were not large enough to yield 50 grams of fillet tissue, composite samples were allowed.

At the pond, 8 largemouth bass, 10 bluegill, 4 channel catfish, and 10 white perch were collected. Three of the largemouth bass were released due to size and number limitations.

---

Ten white perch, 10 bluegill, 1 black crappie, 2 common carp, and 7 yellow perch were collected from Marumsco Creek. None of the measured fish were released.

Three common carp, 10 bluegill, 10 black crappie, 10 american eel, and 8 large mouth bass were collected from the drainage ditch. Two of the large mouth bass and 1 american eel were released due to size and number limitations.

All the samples were measured and recorded in the field notes (Appendix A). All samples were wrapped whole in aluminum foil, dull side toward the sample, and placed in heavy duty freezer bags by species and location. The samples were labeled with species, sample number, location, and collection date. The samples were stored on ice during transport to the storage facility and then frozen at -20°C.

Samples were delivered to ESE in May 1995. ESE is responsible for processing and analyzing the samples.

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# APPENDIX A

## FIELD NOTES

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# **A-1**

# **AQUATIC SYSTEMS**

# **FIELD NOTES**

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10-8-94

WEATHER COND: CLEAR MID 70'S

0600 LEFT PITTSBURGH

1230 ARRIVED AT WOODBRIDGE FACILITY

SITE RECONNAISSANCE OF ALL SAMPLING  
LOCATIONS - CLEAR CUT BEVEL TO OBTAIN  
EASIER ACCESS.

1700 ARRIVED AT HOTEL ROOM

---

10-9-94

WEATHER COND: CLEAR, MID 70'S

0930 ARRIVED AT WOODBRIDGE FACILITY

1040 DR. HIAURAKIS ARRIVED WITH CLAMS

1100 DISTRIBUTING CLAMS INTO BASKETS  
AT GATE AT END OF CHARLIE ROAD

WATER LITEM

TEMP: 19.7 °C

COND: 260

PH: 7.5

HARDNESS: CLAM DISTRIBUTING ARE

DO: 10.5 ppm

1130 PLACED WEDGE MUSSELS (250) INTO 16  
BOXES.

SAMPLED 40 CLAMS FOR CONTROL - ASC  
WILL MAINTAIN AT LAB FROZEN.

1200 BEGAN BASKET DEPLOYMENT

BASKETS WERE MARKED TO IDENTIFY  
BASKET A FROM B AT EACH LOCATION

BASKET A HAS A CABLE TIE IN THE  
CENTER OF THE LID OF BASKET



BASKET B - HAS NO CABLE TIE

LOCATION 1

10-9-94

12:30 TIME

TEMP : 17.8

PH : 5.5

COND : 240

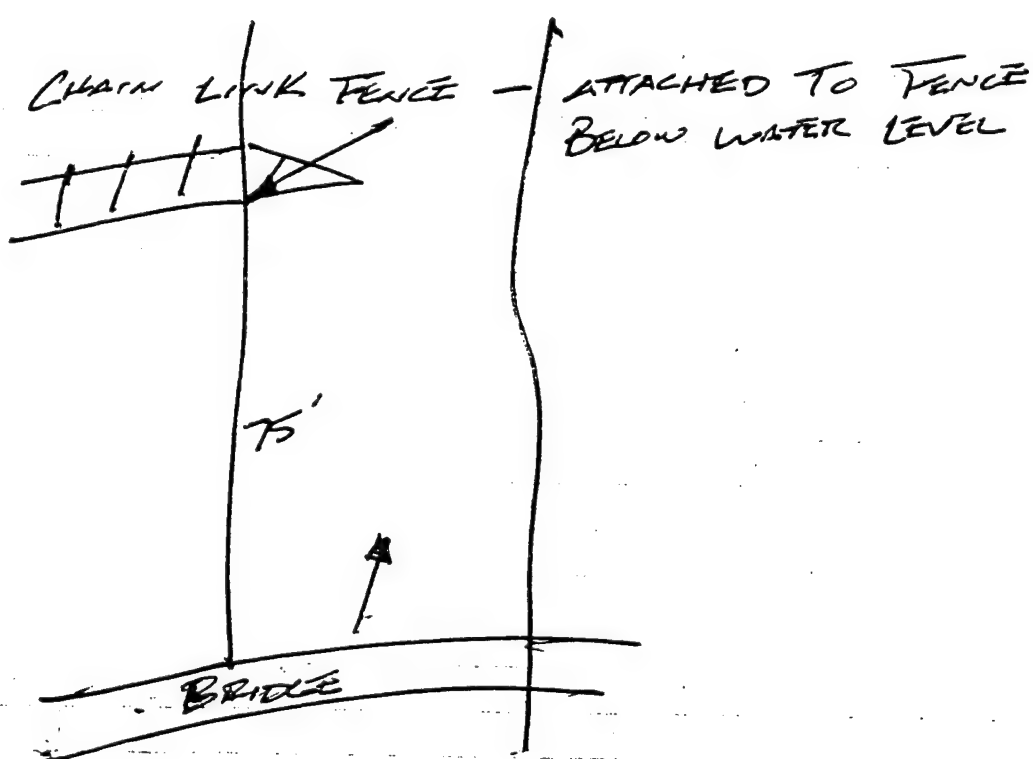
DO : #336 - 6.4 mL

HARDNESS : COLLECTED - MARKED LOC. 1

DEPTH - APPROX 5'

DESR: APPROX. 75' DOWNSTREAM OF BRIDGE CROSSING  
ON LEFT BANK - WHERE U.S. ARMY  
PROPERTY FENCE ENTERS (CROSSES) RIVER.

BASKETS ARE ATTACHED TO CHAIN LINK FENCE



WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 1 STA DATE: 10-24-94  
WEATHER CONDITIONS: SUNNY & CLEAR IN THE 70'S °F  
SAMPLING EVENT: WEEK 2 TIME: 1535

WATER QUALITY

TEMP: 16.9 pH: 6.3  
COND: 160 D.O.: 4.1 ppm  
HARDNESS: \_\_\_\_\_

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 10

DEAD: 170

REMAINDER

BASKET B - CLAMS REMOVED

ALIVE: 10

DEAD: 169

REMAINDER

COMMENTS: 6511 DEAD TISSUE NO. 166 158

WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: STA 1 DATE: NOV 7, 1994  
WEATHER CONDITIONS: SUNNY & CLEAR IN THE 60'S °F  
SAMPLING EVENT: WEEK 4 TIME: 1430

WATER QUALITY

TEMP: 14.0 pH: 6.0  
COND: 220 D.O.: #15 6.5 ppm  
HARDNESS: TAKEN

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 10

DEAD: 55

BASKET B - CLAMS REMOVED

ALIVE: 10

DEAD: 29

COMMENTS: GOV

WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 1 DATE: 11-21-94

WEATHER CONDITIONS: RAIN

SAMPLING EVENT: WEEK 6 TIME: 1545

WATER QUALITY

TEMP: 14.0 pH: 6.2

COND: 120 D.O.: #336 6.9 ppm

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 2

DEAD: 9

BASKET B - CLAMS REMOVED

ALIVE: 10

DEAD: 14

COMMENTS: COMBINED ALIVE CLAMS TO

CONSTITUTE 1 SAMPLE -

POOLED BASKETS - CLAMS WERE

DELETED

WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 1 DATE: 12-5-94

WEATHER CONDITIONS: \_\_\_\_\_

SAMPLING EVENT: WEEK 8 TIME: 1615

WATER QUALITY

TEMP: 15.0 pH: 6.0  
COND: 200 D.O.: 4.20 (7.2 ppm)  
HARDNESS: Collected

WEDGE CLAM SAMPLING

~~BASKET A - CLAMS REMOVED~~

~~ALIVE: \_\_\_\_\_~~

~~DEAD: \_\_\_\_\_~~

~~BASKET B - CLAMS REMOVED~~

~~ALIVE: \_\_\_\_\_~~

~~DEAD: \_\_\_\_\_~~

COMMENTS: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

LOCATION Z 10-9-94

TIME: 1320

TEMP: 20.7

#H: C.6

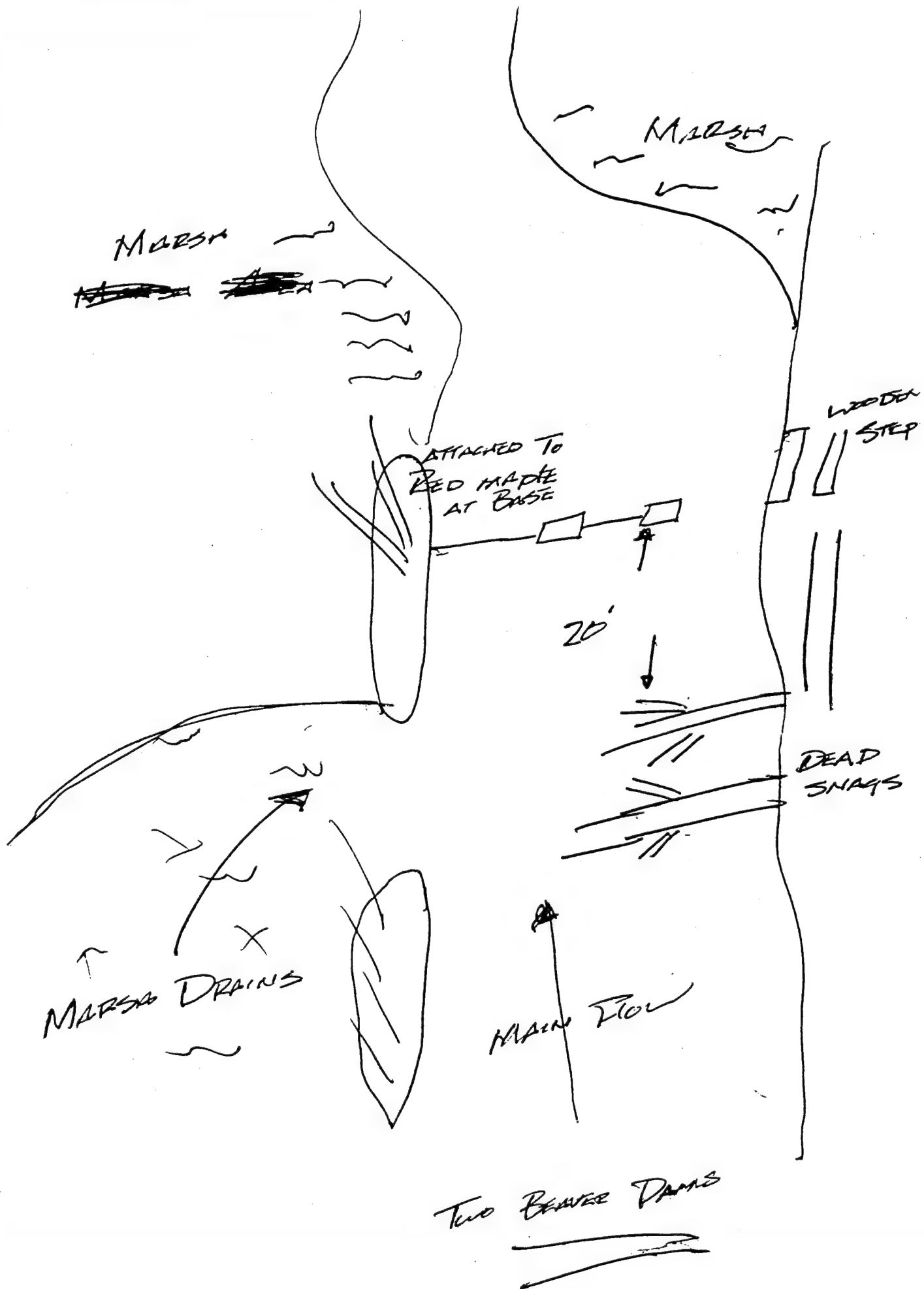
COND: 270

DO: #3 - 9.4 m/L

HARDNESS: COLLECTED - MARKED LOC Z

DECR. \* Drawing on Following Page





WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: STA 2 DATE: OCT 24, 1994  
WEATHER CONDITIONS: SUNNY & CLEAR IN THE 70'S °C  
SAMPLING EVENT: 2 WEEK TIME: 1450

WATER QUALITY

TEMP: 18.5 pH: 6.5  
COND: 160 D.O.: #3 7.4 ppm  
HARDNESS: \_\_\_\_\_

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 10

DEAD: 198

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 6

COMMENTS: GSL

BASKET

A

B

DEAD TISSUE NO.

166

5

RETIED BASKETS TO DEAD TREE IN  
MIDDLE OF STREAM.

LINES WERE CHAINED ? THROUGH BY  
SOME ANIMAL

WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 2 DATE: 11-7-94  
WEATHER CONDITIONS: SUNNY AND CLEAR IN THE 60'S °F  
SAMPLING EVENT: WEEK 4 TIME: 1400

WATER QUALITY

TEMP: 16.0 pH: 6.0  
COND: 240 D.O.: #336 7.1 ppm  
HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 10

DEAD: 1

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 4

COMMENTS: GSK

WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 2 DATE: 11-21-94

WEATHER CONDITIONS: \_\_\_\_\_

SAMPLING EVENT: WEEK 6 TIME: 1620

WATER QUALITY

TEMP: 14.0 pH: 6.1

COND: 80 D.O.: #3 6.8 ppm

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 10

DEAD: 4

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 20

COMMENTS: \_\_\_\_\_

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WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 2 DATE: 12-5-94  
WEATHER CONDITIONS: PARTLY CLOUDY MID 60's  
SAMPLING EVENT: WEEK 8 TIME: 1600

WATER QUALITY

TEMP: 14.0 pH: 5.75  
COND: 180 D.O.: # 336 (6.5 ppm)  
HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 17  
DEAD: 3

BASKET B - CLAMS REMOVED

ALIVE: 20 (151)  
DEAD: 9 TOTAL 20

COMMENTS:

BASKETS REMOVED

LOCATION 3

10-9-94

TIME : 1440

TEMP : 21.5

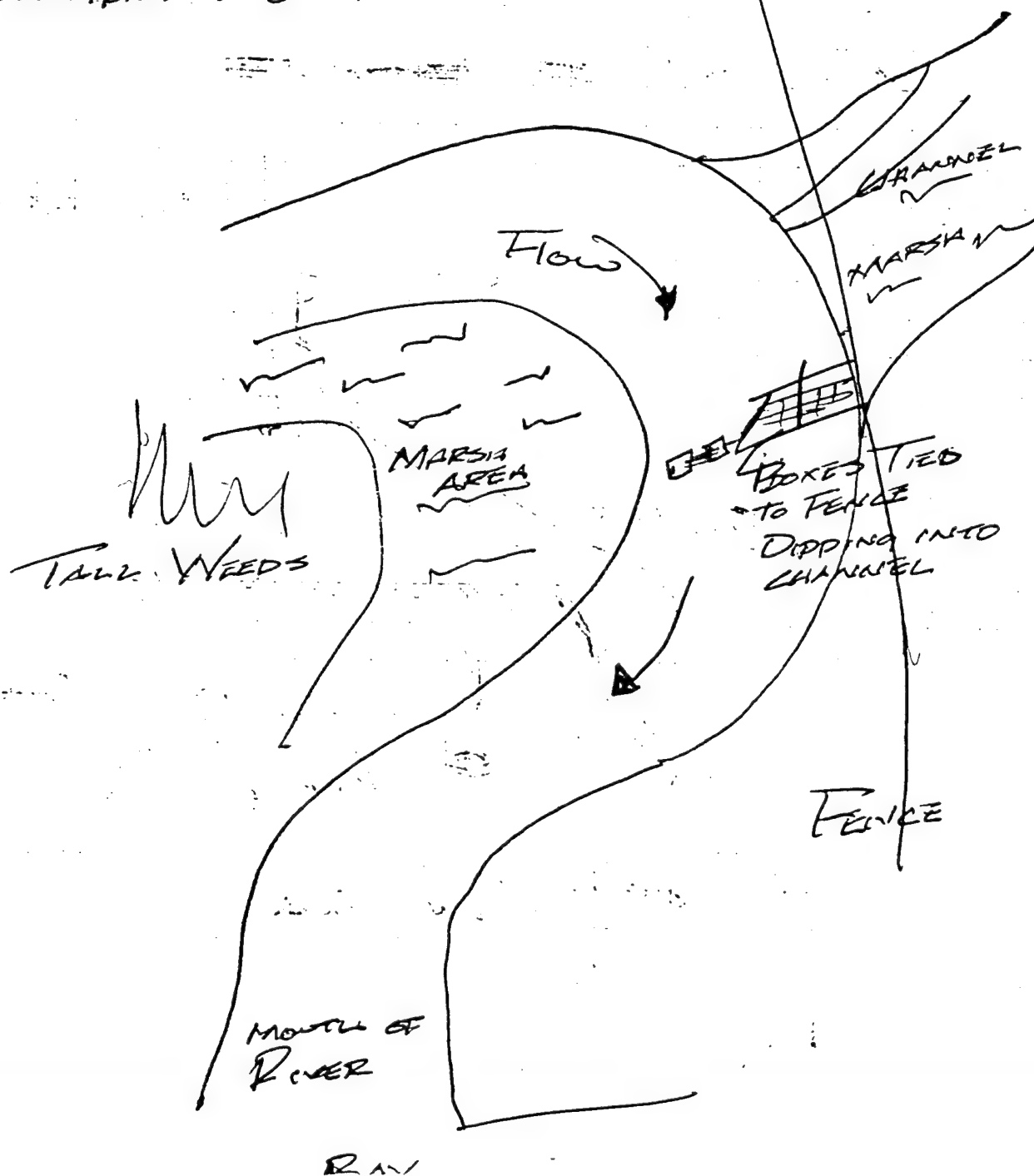
pH : 7.8

COND : 270

DO : #15 - 11.1 mg/L

HARDNESS : TO BE DONE AT LAB

DESCRIPTION : OK - BAW



WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: STN 3 DATE: OCT 24, 1994

WEATHER CONDITIONS: SUNNY & CLEAR IN THE 70'S °F

SAMPLING EVENT: 2 week TIME: 1420

WATER QUALITY

TEMP: 18.5 pH: 6.9

COND: 210 D.O.: # 15 10.6 ppm

HARDNESS: \_\_\_\_\_

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 22

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 35

COMMENTS: GJA

BASKET

A

B

DEAD TISSUE NO. 13

21

WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: STA 3 DATE: NOV 7, 1994  
WEATHER CONDITIONS: SUNNY & CLEAR IN THE 60'S °F  
SAMPLING EVENT: WEEK 4 TIME: 1300

WATER QUALITY

TEMP: 16.0 pH: 6.4  
COND: 380 D.O.: #3 9.4 ppm  
HARDNESS: TAKEN #3

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 4

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 2

COMMENTS: GTX



WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: Loc 3 DATE: 11-21-94

WEATHER CONDITIONS: \_\_\_\_\_

SAMPLING EVENT: WEEK 6 TIME: 1500

WATER QUALITY

TEMP: 13.0 pH: 6.1

COND: 140 D.O.: 4.6 8.8 ppm

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 1

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 1

COMMENTS: \_\_\_\_\_

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WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 3 DATE: 12-5-94  
WEATHER CONDITIONS: Clear High 60's  
SAMPLING EVENT: WEEK 8 TIME: 1425

WATER QUALITY

TEMP: 14.0° pH: 5.6  
COND: 290 D.O.: 4.6 (7.9 ppm)  
HARDNESS: Collected

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20 (173) TOTAL  
DEAD: 0 LIVE

BASKET B - CLAMS REMOVED

ALIVE: 20 (174) LC  
DEAD: 1 LC

154 REMAINING

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_

LOCATION 4

TIME 1415

TEMP : 20.9

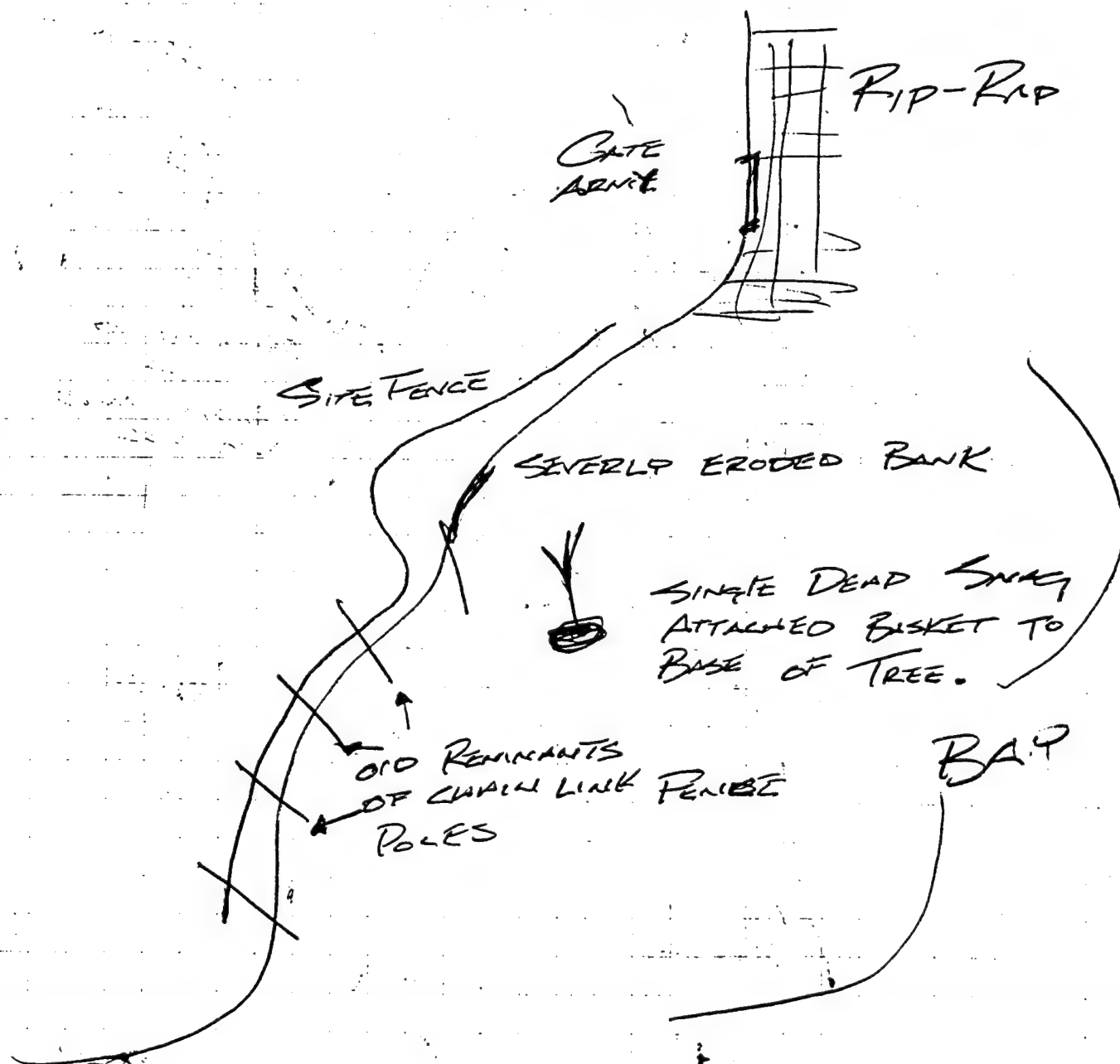
pH : 7.55

COND : 300

DB : #6 - 10.8 m/L

HARDNESS : TO BE DONE AT LAB.

DESCRIPTION : ~~4th~~ ~~PARROT~~ ~~1st~~



WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: STA 4 DATE: OCT 24, 1994

WEATHER CONDITIONS: SUNNY CLEAR SKYS IN THE 70'S °F

SAMPLING EVENT: 2 WEEK TIME: 1400

WATER QUALITY

TEMP: 18.0 pH: 7.6

COND: 220 D.O.: #20 12.2 ppm

HARDNESS: #4 TAKEN

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 33

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 37

COMMENTS: GSK

	<u>BASKET</u>	
	<u>A</u>	<u>B</u>

DEAD TISSUE NO.	<u>28</u>	<u>29</u>
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WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: STA 4 DATE: NOV 7, 1994  
WEATHER CONDITIONS: SUNNY & CLEAR IN THE 60'S °  
SAMPLING EVENT: Week 4 TIME: 1225

WATER QUALITY

TEMP: 16.0 pH: 7.5  
COND: 430 D.O.: #20 10.5 ppm  
HARDNESS: TAKEN #4

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 1

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 3

COMMENTS: GJH

WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 4 DATE: 11-21-94

WEATHER CONDITIONS: OVERCAST, RAIN, EOS

SAMPLING EVENT: WEEK 6 TIME: 1430

WATER QUALITY

TEMP: 13.0 pH: 6.6

COND: 200 D.O.: #15 10.6 ppm

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 1

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 1

COMMENTS: \_\_\_\_\_

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WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 4 DATE: DEC 5, 1974  
WEATHER CONDITIONS: SUNNY IN THE 60'S F  
SAMPLING EVENT: WEEK 8 TIME: 1410

WATER QUALITY

TEMP: 13.0 pH: 5.5  
COND: 300 D.O.: #12 (7.8 ppm)  
HARDNESS: TAKEN

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 151 (20)  
DEAD: 0

BASKET B - CLAMS REMOVED

ALIVE: 146 (20)  
DEAD: 1

COMMENTS: 65K REMOVED BASKETS

LOCATION 5

10-9-94

TIME : 1750

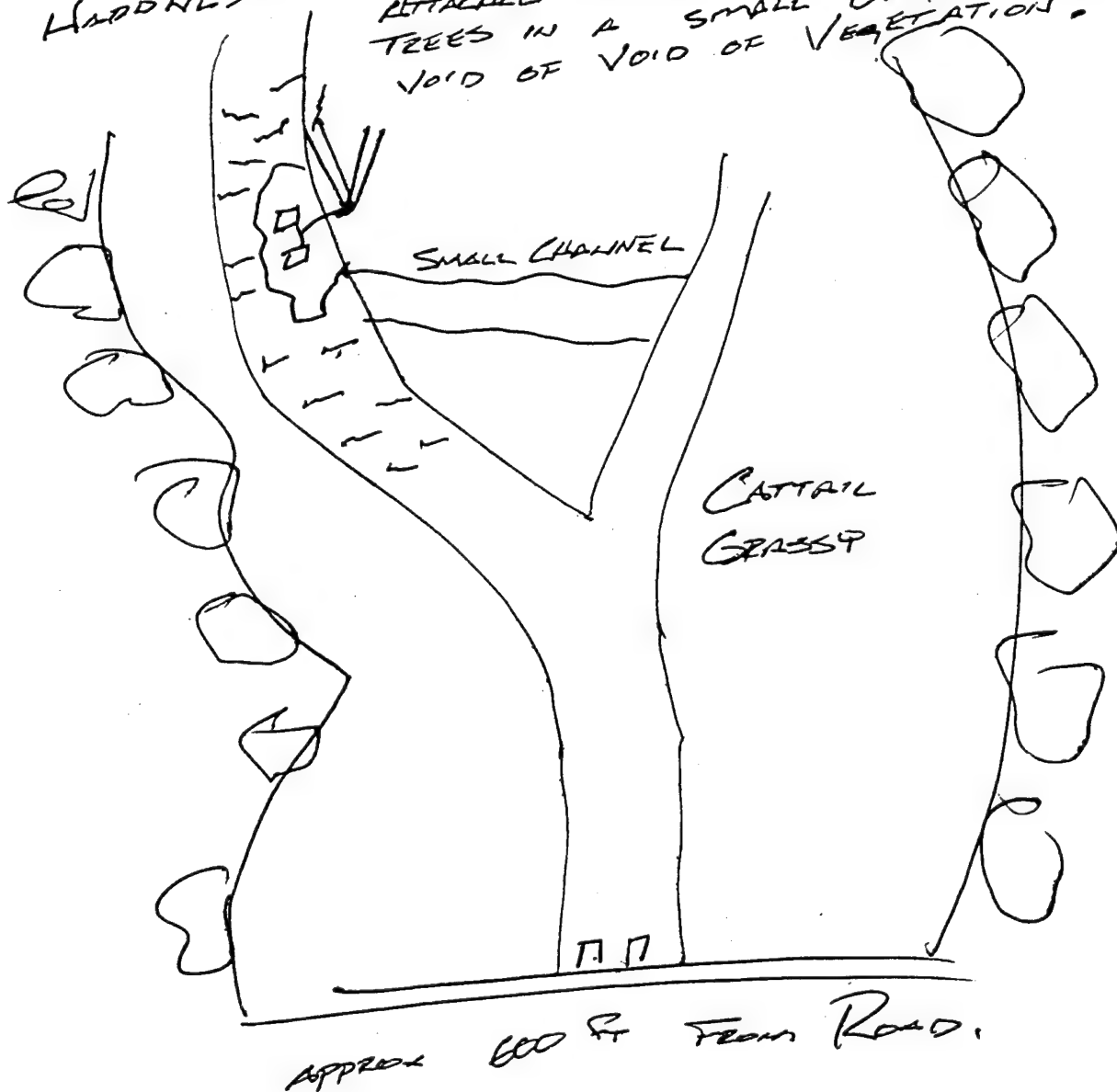
TEMP : 23.0°C

PH : 6.1

COND : 260

DO : #3 8.6 m/L

HARDNESS : TO BE CONDUCTED AT LAB  
ATTACHED BASKETS TO BASE OF 2 SM  
TREES IN A SMALL DEEPER POOL  
VOID OF VOID OF VEGETATION.





WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 5 DATE: 10-25-94

WEATHER CONDITIONS: Clear Low 60's

SAMPLING EVENT: WEEK 2 TIME: 9:00

WATER QUALITY

TEMP: 13°C pH: 5.7  
COND: 240 D.O.: #20,6 - #20 - 5.6 ml/L  
HARDNESS: Collected #6 - 5.5 ml/L

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: ~~20~~ 10

DEAD: 180

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 62

COMMENTS: GSK

BASKET

A

B

DEAD TISSUE

143

47

WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 5 DATE: NOV 7, 1994  
WEATHER CONDITIONS: SUNNY CLEAR DUSK 50'S °F  
SAMPLING EVENT: WEEK 4 TIME: 1630

WATER QUALITY

TEMP: 17.0 pH: 6.3  
COND: 320 D.O.: #2 11.3 ppm  
HARDNESS: TAKEN

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 10  
DEAD: 3

BASKET B - CLAMS REMOVED

ALIVE: 20  
DEAD: 4

COMMENTS: GSK

WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 5 DATE: 11-22-94

WEATHER CONDITIONS: Clear Low E's

SAMPLING EVENT: WEEK 6 TIME: 0910

WATER QUALITY

TEMP: 10°C pH: 6.3

COND: 520 D.O.: #3 8.3 ppm

HARDNESS: Collected

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 1

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 2

COMMENTS: \_\_\_\_\_

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WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 5 DATE: 12-6-94

WEATHER CONDITIONS: PARTLY CLOUDY 50s

SAMPLING EVENT: WEEK 8 TIME: 0905

WATER QUALITY

TEMP: 10.5° C pH: 6.5

COND: 940 D.O.: #20 8.5 ppm

HARDNESS: Collected

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 21

DEAD: 2

BASKET B - CLAMS REMOVED

ALIVE: 20 113 TOTAL

DEAD: 5 LIVE

COMMENTS: BASKETS REMOVED

LOCATION 6

10-9-74

TIME : 1650  
TEMP : 19.9°C

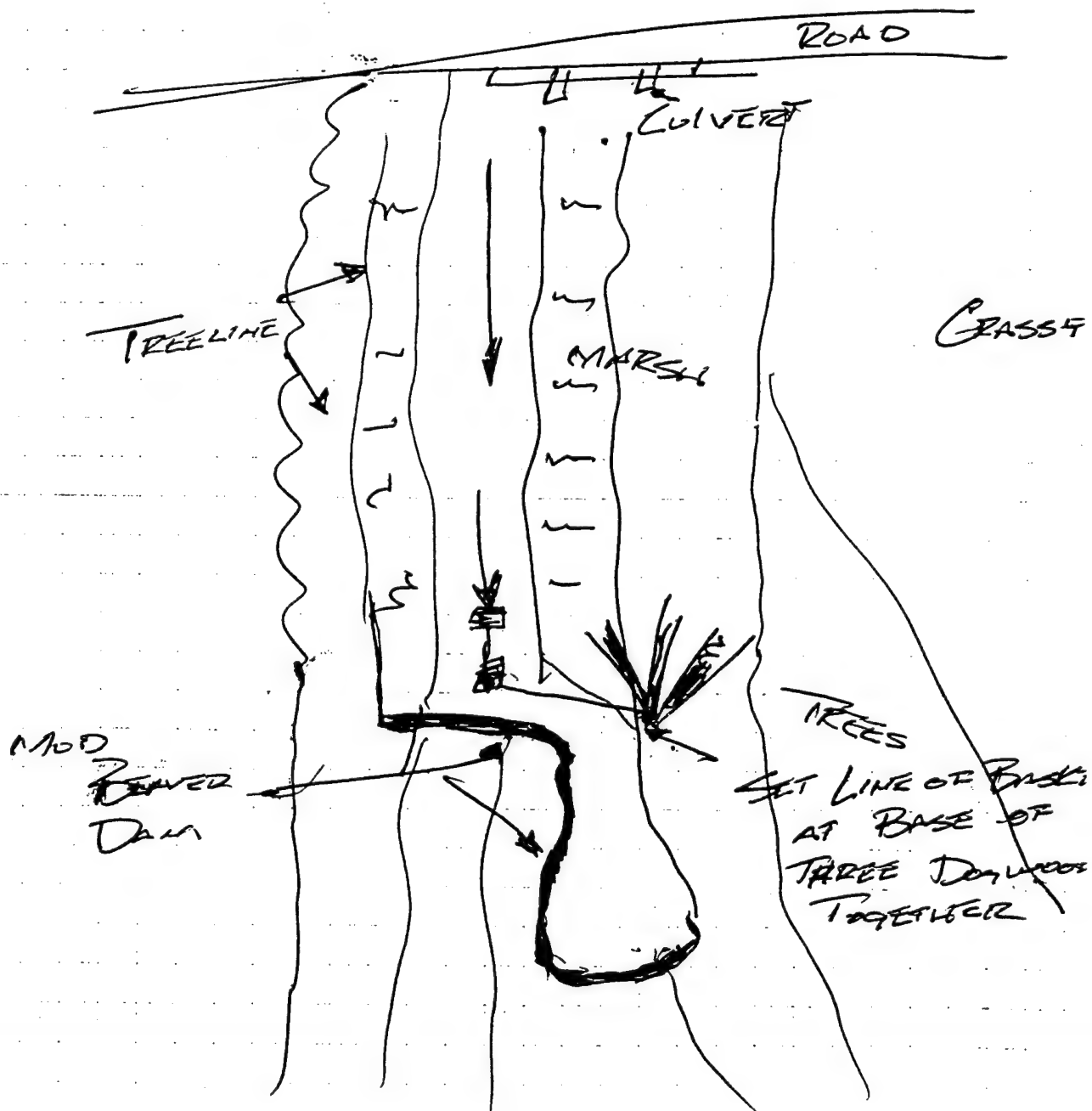
pH : 5.7

COND : 130

DO : #20 8.1 mg/L

HARDNESS : TO BE CONDUCTED AT LAB

DESCRIPTIONS : BASKETS PLACED



WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 6 DATE: OCT 25, 1994

WEATHER CONDITIONS: \_\_\_\_\_

SAMPLING EVENT: WEEK 2 TIME: 1035

WATER QUALITY

TEMP: 14.5 °C pH: 6.0

COND: 130 D.O.: 7.336 → 6.7 mg/L

HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 10

DEAD: 226

BASKET B - CLAMS REMOVED

ALIVE: 10

DEAD: 191

COMMENTS: 65K BASKET  
A B

DEAD TISSUE 222 179

WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 6 DATE: NOV 7, 1994  
WEATHER CONDITIONS: SUNNY CLEAR IN 60'S F  
SAMPLING EVENT: WEEK 4 TIME: 1535

WATER QUALITY

TEMP: 17.0 pH: 6.1  
COND: 180 D.O.: #6 9.1 ppm  
HARDNESS: TAKEN

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: (2)

DEAD: 12

MOVED TO  
LAGE  
B -  
NOT  
REMOVED

BASKET B - CLAMS REMOVED

ALIVE: 10

DEAD: 24

COMMENTS: 6/12

NO LIVE CLAMS REMOVED FROM  
LAGE A - 2 REMAINING WERE  
MOVED TO LAGE B -  
LAGE A REMOVED

WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 6 DATE: 4-22-94

WEATHER CONDITIONS: Clear Low 60's

SAMPLING EVENT: Week 6 TIME: 0930

WATER QUALITY

TEMP: 11.0°C pH: 6.1

COND: 380 D.O.: 20 8.4 ppm

HARDNESS: Collected

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 2

DEAD: Removed

BASKET B - CLAMS REMOVED

ALIVE: 3

DEAD: 15

COMMENTS: Removed BASKET B - ALSO -

DEPLETED NO OF CLAMS



WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 6 DATE: 12-5-94

WEATHER CONDITIONS: \_\_\_\_\_

SAMPLING EVENT: WEEK 8 TIME: 1520

WATER QUALITY

TEMP: 10.5 °C pH: 5.9

COND: 230 D.O.: #15 (11.3 ppm)

HARDNESS: Collected

~~WEDGE CLAM SAMPLING~~

~~BASKET A - CLAMS REMOVED~~

~~ALIVE: \_\_\_\_\_~~

~~DEAD: \_\_\_\_\_~~

~~BASKET B - CLAMS REMOVED~~

~~ALIVE: \_\_\_\_\_~~

~~DEAD: \_\_\_\_\_~~

COMMENTS: \_\_\_\_\_

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LOCATION: (7)

10-9-94

TIME: 1625

Temp: 19.9°C

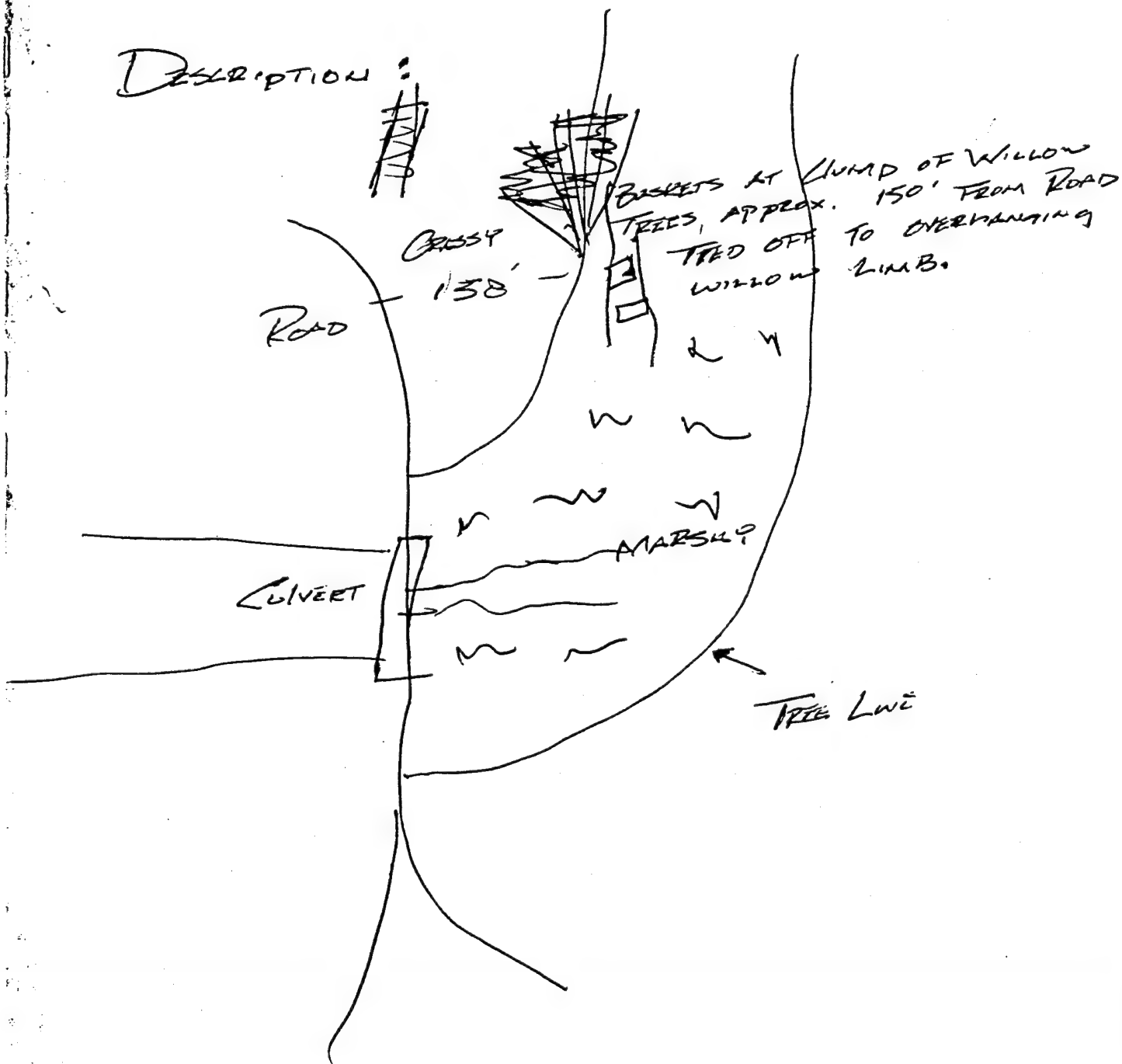
pH: 5.45 and

COND: 130

DO: #15 5.2 mg/L

HARDNESS: TO BE CONDUCTED AT LAB

DESCRIPTION:



WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 7 DATE: 10-25-94

WEATHER CONDITIONS: \_\_\_\_\_

SAMPLING EVENT: WEEK 2 TIME: 0940

WATER QUALITY

TEMP: 16.5°C pH: 5.3  
COND: 120 D.O.: #3 → 1.0 mg/L

HARDNESS: Collected

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: \_\_\_\_\_

DEAD: 250

BASKET B - CLAMS REMOVED

ALIVE: \_\_\_\_\_

DEAD: 250

COMMENTS: 100% MORTALITY IN BOTH BASKETS  
(A,B) BASKETS WERE REMOVED

BASKET

A

B

DEAD TISSUE

246

250

WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 7 DATE: Nov 8, 1994

WEATHER CONDITIONS: clear cool in the 50's °F

SAMPLING EVENT: Week 4 TIME: 0830

WATER QUALITY

TEMP: 8.0 pH: 5.1

COND: 140 D.O.: # → 2.8 ppm

HARDNESS: TAKEN

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE:           

DEAD:           

BASKET B - CLAMS REMOVED

ALIVE:           

DEAD:           

COMMENTS: BSR

WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 7 DATE: 11-22-94

WEATHER CONDITIONS: Clear low 60's

SAMPLING EVENT: Week 6 TIME: 0920

WATER QUALITY

TEMP: 9.5°C pH: 5.3

COND: 180 D.O.: #6 3.1 ppm

HARDNESS: Collected

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

BASKET B - CLAMS REMOVED

ALIVE: \_\_\_\_\_

ALIVE: \_\_\_\_\_

DEAD: \_\_\_\_\_

DEAD: \_\_\_\_\_

COMMENTS: \_\_\_\_\_

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WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 7 DATE: 12-5-94

WEATHER CONDITIONS: \_\_\_\_\_

SAMPLING EVENT: WEEK 8 TIME: 1530

WATER QUALITY

TEMP: 14.0 pH: 5.1  
COND: 140 D.O.: #3 (7.5 ppm)  
HARDNESS: COLLECTED

WEDGE CLAM SAMPLING

~~BASKET A - CLAMS REMOVED~~

~~ALIVE: \_\_\_\_\_~~

~~DEAD: \_\_\_\_\_~~

~~BASKET B - CLAMS REMOVED~~

~~ALIVE: \_\_\_\_\_~~

~~DEAD: \_\_\_\_\_~~

COMMENTS: \_\_\_\_\_

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WOODBRIDGE RESEARCH FACILITY  
WEEK 6 - CLAM REMOVAL  
WATER QUALITY DATA

11-21, 22-94

	<u>TEMP °C</u>	<u>PH</u>	<u>COND.</u>	<u>D.O.</u>	<u>HARDNESS</u>	<u>TIME</u>
STA 1	14.0	6.2	120	6.9	80	1545
STA 2	14.0	6.1	80	6.8	60	1620
STA 3	13.0	6.1	140	8.8	100	1500
STA 4	13.0	6.6	200	10.6	140	1430
STA 5	10.0	6.3	520	8.3	120	0910
STA 6	11.0	6.1	380	8.4	100	0930
STA 7	9.5	5.3	180	3.1	60	0920
STA 8	12.0	6.8	500	10.3	120	0830

WOODBRIIDGE RESEARCH FACILITY  
WEEK 8 - FINAL CLAM REMOVAL  
WATER QUALITY DATA

12-5,6-94

	<u>TEMP °C</u>	<u>pH</u>	<u>COND</u>	<u>D.O.</u>	<u>HARDNESS</u>	<u>TIME</u>
STA 1	15.0	6.0	200	7.2	100	1615
STA 2	14.0	5.75	180	6.5	60	1600
STA 3	14.0	5.6	290	7.9	80	1425
STA 4	13.0	5.5	300	7.8	100	1410
STA 5	10.5	6.5	940	8.5	240	0905
STA 6	10.5	5.9	230	5.9	—	1520
STA 7	14.0	5.1	140	7.5	—	1530
STA 8	10.0	6.7	900	10.6	240	0830



LOCATION 8

10-9-94

Time : 1840

Temp : 20.6

pH : 7.7

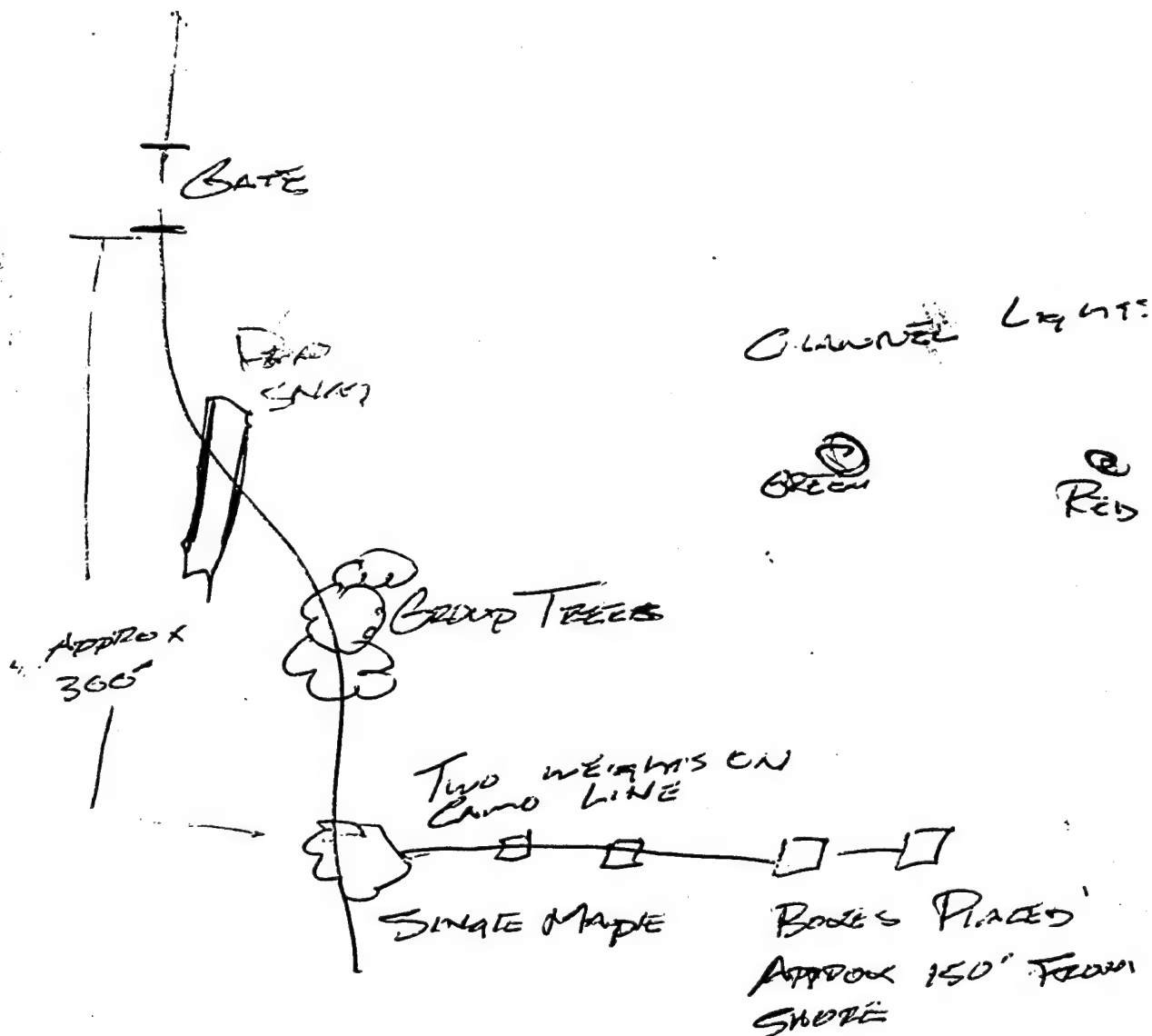
COND : 250

TO : 336 9.6 m/L

TO

HARDNESS: TO BE CONDUCTED AT LAB

Description:



WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: B DATE: 10-24-94  
WEATHER CONDITIONS: Clear Sunny Low 70's  
SAMPLING EVENT: WEEK 2 (Removal) TIME: 1249

WATER QUALITY

TEMP: 18°C pH: 7.5  
COND: 240 D.O.: #336 #2  
HARDNESS: Collected 12.6 ppm 12.6 ppm

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 85

if  
35  
04

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 119

COMMENTS: A-BASKET - B

DEAD TISSUE NO. 69 106

WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 8 DATE: 11-22-94  
WEATHER CONDITIONS: Clear Light 50's  
SAMPLING EVENT: WEEK 6 TIME: 0830

WATER QUALITY

TEMP: 12.0 °C pH: 6.8  
COND: 500 D.O.: #12 10.3 ppm  
HARDNESS: Collected

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20

DEAD: 0

BASKET B - CLAMS REMOVED

ALIVE: 20

DEAD: 1

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
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WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: STA 8 DATE: NOV 7, 1994

WEATHER CONDITIONS: SUNNY & CLEAR IN THE 60'S °C

SAMPLING EVENT: WEEK 4 TIME: 1130

WATER QUALITY

TEMP: 15.0 pH: 6.8

COND: 340 D.O.: # 12 11.7 PP14

HARDNESS: ~~46~~

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20 REMOVED

DEAD: 12 "

BASKET B - CLAMS REMOVED

ALIVE: 20 REMOVED

DEAD: 11 "

COMMENTS: 6514

WOODBIDGE RESEARCH FACILITY  
FIELD DATA SHEET

LOCATION: 8 DATE: 12-6-92  
WEATHER CONDITIONS: Partly Cloudy  
SAMPLING EVENT: Week 8 TIME: 0830

WATER QUALITY

TEMP: 10.0°C pH: 6.7  
COND: 900 D.O.: #6 10.6 ppm  
HARDNESS: Collected

WEDGE CLAM SAMPLING

BASKET A - CLAMS REMOVED

ALIVE: 20 (90 <sup>TOTAL</sup> <sub>LIVE</sub>)  
DEAD: 0

BASKET B - CLAMS REMOVED

ALIVE: ~~56~~ 20 (56 <sup>TOTAL</sup> <sub>LIVE</sub>)  
DEAD: 1

COMMENTS: REMOVED BASKETS

# NEW BRIDGE RESERVOIR FACILITY - WATER QUALITY DATA 10-9-94 CLAM PLACEMENT

	TEMP °C	P.H.	COND	D.O.	HARDNESS	TIME
STA 1	17.8	5.5	240	6.4	60	1230
STA 2	20.7	6.6	270	9.4	100	1320
STA 3	21.5	7.8	270	11.1	80	1440
STA 4	20.9	7.5	300	10.8	100	1415
STA 5	23.0	6.1	260	8.6	100	1750
STA 6	19.9	5.7	130	8.1	40	1650
STA 7	19.9	5.5	130	5.2	20	1625
STA 8	20.6	7.7	250	9.6	80	1840
CLAM HOLDING AREA	19.7	7.5	260	10.5	100	1100

# WOODBRIDGE RESEARCH FACILITY

WEEK 2 - CAN REMOVAL

WATER QUALITY DATA

10-24-25-GH

STA	TEMP °C	PH	COND.	D.O.	HARDNESS	TIME
STA 1	16.8	6.3	160	4.1	80	1535
STA 2	18.5	6.5	160	7.4	60	1450
STA 3	18.5	6.9	210	10.6	100	1420
STA 4	18.0	7.6	220	12.2	100	1400
STA 5	13.0	5.7	240	5.6	100	0900
STA 6	14.5	6.0	130	6.7	60	1035
STA 7	16.5	5.3	120	1.0	40	0940
STA 8	18.0	7.5	240	12.6	120	1249

WOODBRIDGE RESEARCH FACILITY  
 WEEK 4 - CLAY REMOVAL, FISHERY SURVEY  
 WATER QUALITY DATA

FORM 331A

	TEMP °C	PH	COND.	D.O.	HARDNESS	TIME
SIA 1	14.0	6.0	220	6.5	80	1430
SIA 2	16.0	6.0	240	7.1	60	1400
SIA 3	16.0	6.4	380	9.4	120	1300
SIA 4	16.0	7.5	430	10.5	120	1225
SIA 5	17.0	6.3	320	11.3	100	1630
SIA 6	17.0	6.1	180	9.1	40	1530
SIA 7	8.0	5.1	140	2.8	40	0830
SIA 8	15.0	6.8	340	11.7	120	1130
POND	14.0	4.7	50	9.4	20	0840



WOODBRIDGE RESEARCH FACILITY  
WEEK 2 - CLAM REMOVAL

10-24, 25-24

	CLAMS		REMOVED		CLAMS REMAINING	% MORTALITY
	ALIVE	DEAD	DEAD	(TUBES)		
STA 1	A	10	170	(164)	70	68
	B	10	169	(158)	71	68
STA 2	A	10	198	(166)	42	79
	B	20	6	(5)	224	2
STA 3	A	20	22	(13)	208	9
	B	20	35	(21)	195	14
STA 4	A	20	33	(28)	197	13
	B	20	37	(29)	193	15
STA 5	A	10	180	(143)	60	72
	B	20	62	(47)	168	25
STA 6	A	10	226	(222)	14	90
	B	10	191	(179)	49	76
STA 7	A	0	250	(246)	0	100
	B	0	250	(250)	0	100
STA 8	A	20	85	(69)	145	34
	B	20	119	(106)	111	48

ILLED BASKETS (A,B) FROM STA 7 WHICH HAD 100% MORTALITY

WATER CHEM. → POND - FISH  
11-8-94 WEEK 4

TIME 0845

TEMP 14°C

COND 50

PH 4.7

DO #20 → 9.4 mg/L

HARDNESS TAKEN

$$\begin{array}{r} 16.1 \\ + 7.0 \\ 7.6 \\ \hline 9.4 \end{array}$$

$$\begin{array}{r} 6.6 \\ + 7.6 \\ 4.8 \\ \hline 2.8 \end{array}$$

1-800-448-8522

No. 1 page 1 of 1

## FISH LABORATORY WORK SHEET

Client Name and Number

WRF - SEIMING

Date and Station

11-8-94 LOC 9

Type of Sample

BASS LAKE / BLUEGILL

LOG#

Fish No.	Species Name	Length (TL, FL, SL, mm)	Weight (grams)	Scales Taken	Stomach Taken	K Factor	VOUCHER NUMBER
7	LARGEMOUTH	410					
8	"	390					
9	"	403					
0	"	x <del>388</del>	356				X
1	"	x 283					X
2	"	x 295					X
3	"	x 285					X
4	"	x <del>388</del> 294					X
5							
6							
7	BLUEGILL	203					
8	"	201					
9	"	200					
0	"	200					
1	"	192					
2	"	198					
3	"	191					
4	"	185					
5	"	179					
6	"	175					
7							
8	MINNAPET CATFISH	410					
9	"	392					
0							
1							
2							
3							
4	PERCH						
5	WHITE <del>BASS</del>						
6							

SAMPLE  
(5)NO SPECIMENS  
TAKEN

TAKEN

RELEASED

# FISH LABORATORY WORK SHEET

Page      of     

Client Name and Number WRT / Gill Netting  
 Date and Station 11-9-94 Pond  
 Date of Sample Fish LOG#     

Sh.	Species Name	Length (TL, FL, SL, mm)	Weight (grams)	Scales Taken	Stomach Taken	K Factor	VOUCHER NUMBER
7	WHITE PERCH	241					
8	"	216					
9	"	222					
0	"	223					
1	"	212					
2	"	224					
3							
4	CHANNEL CATFISH	432					
5	"	395					
6							
7							
8							
9	WHITE PERCH	209					
0	"	230					
1	"	211					
2	"	225					
3							
4							
5							
6							
7							
8							
9							
0							
1							
2							
3							
4							
5							
6							

TAKEN FOR  
SAMPLE (6)

SAMPLED 11-9 GN  
 SAMPLED 11-10 GN

SAMPLED 11-10  
 GN

## FISH LABORATORY WORK SHEET

Client Name and Number WRF LOC 10Date and Station 11-9-94 LOC 10Type of Sample FISH ELECTROFISHING/SEINING LOG# \_\_\_\_\_

Fish No.	Species Name	Length (TL, FL, SL, mm)	Weight (grams)	Scales Taken	Stomach Taken	K Factor	VOUCHER NUMBER
7	WHITE PERCH	181					
8	"	175					
9	"	182					
0	"	166					
1	"	157					
2	"	155					
3	"	149					
4	"	157					
5	"	147					
6	"	147					
7							
8							
9	BLUEGILL	157					
0	"	163					
1	"	153					
2	"	146					
3	"	152					
4	"	155					
5	"	164					
6	"	135					
7	"	132					
8	"	124					
9							
0							
1	BLACK CRAPPIE	196					
2							
3							
4							
5							
6							



## FISH LABORATORY WORK SHEET

ent Name and Number WRF  
e and Station 11-10-94 LOC 10  
e of Sample GILL NET LOG# \_\_\_\_\_

h	Species Name	Length (TL, FL, SL, <del>MM</del> )	Weight (grams)	Scales Taken	Stomach Taken	K Factor	VOUCHER NUMBER
7	Common CARP	520	}	TAKEN FOR Sample			
8	"	435		2-Fish			
9							
0							
1	Yellow PERCH	206	}	TAKEN FOR SAMPLE 10-10-94 T-FISH			
2	"	175 *					
3	"	230					
4	"	210					
5	"	190 *					
6	"	260					
7	"	245					
8							
9		* NOT 75%					
0							
1							
2							
3							
4							
5							
6							
7							
8							
9							
0							
1							
2							
3							
4							
5							
6							

## FISH LABORATORY WORK SHEET

Client Name and Number WRFDate and Station 11-8-74 LOC 11Type of Sample FISH / ELECTROFISH

LOG# \_\_\_\_\_

Fish No.	Species Name	Length (TL, FL, SL, <del>ADP</del> )	Weight (grams)	Scales Taken	Stomach Taken	K Factor	VOUCHER NUMBER
7	BLACK CRAPPIE	170	}	TAKEN FOR SAMPLE (5)		11-8	
8	"	152					
9	"	189					
0	"	182					
1	"	190					
2	"	175	}	SAMPLED (5)	11-9		
3	"	193					
4	"	184					
5	"	162					
6	"	190					
7							
8	AMERICAN EEL		}	TAKEN FOR SAMPLE 11-8 (7)			
9	EEL	285					
0	"	286					
1	"	273					
2	"	271					
3	"	253	}	SAMPLED 11-9 (2)			
4	"	225					
5	"	210					
6	"	170					
7	"	295					
8	"	265					
9							
0							
1							
2							
3							
4							
5							
6							



## FISH LABORATORY WORK SHEET

nt Name and Number LOG 11 WRF  
and Station 11-8-94 LOG 11 WETLAND  
of Sample FISH 1 ELECTROFISHING LOG# \_\_\_\_\_

1	Species Name	Length (TL, FL, SL, mm)	Weight (grams)	Scales Taken	Stomach Taken	K Factor	VOUCHER NUMBER
2	LARGEMOUTH BASS	229					1
3	"	242					2
4	"	266					3
5	"	253					4
6	"	239					5
7	"	223					6
8	"	165					
9	"	155					
10							
11							
12	BLUEGILL	166					
13	"	140					
14	"	145					
15	"	159					
16	"	138					
17	"	129					
18	"	127					
19	"	127					
20	"	125					
21	"	126					
22	"	127					
23	"	127					
24	COMMON CARP	310					
25	"	363					
26	"	289					
27	"						
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
50							



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# **A-2**

# **EARTH TECH**

# **FIELD NOTES**

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SATURDAY OCTOBER 8, 1994

WEATHER: SUNNY, CLOUD, HIGH IN LOW 70'S

55- CHRIS LONG AND BIODA SUBCONTRACTORS ONSITE AT MAIN GATE

00- KEITH SCHENKEL ONSITE AT MAIN GATE

05- KATHY JANICA ONSITE AT MAIN GATE

15- KEVIN MCCROWOR ONSITE AT MAIN GATE

- EVERYONE GOES TO EARTH TECH TRAILER TO DROP OFF CARS. THEN GO TO MAIN COMPOUND TO DROP OFF BIODA SUBCONTRACTORS BOATS.

330- GO TO REVIEW LOCATIONS OF CLAM BOXES AND FISH COLLECTION AREAS WITH BIODA SUBCONTRACTORS BEGIN AT CLAM BOX SITE IN BELMONT BAY.

- ACCESS TO BELMONT BAY APPEARS TO BE REASONABLE FROM GATE NEAR TOMBSTONES. THIS ACCESS MAY ALSO BE SUFFICIENT FOR ALL SITES OUTSIDE OF THE ~~MAIN CAMP~~ CL 1018 PERIMETER FENCE.

45- MOVING TO CLAM BOX LOCATION AT DOWNSTREAM POINT IN DRAINAGE DITCH (AREA 22).

- SUGGEST THAT ONE ACCESS POINT FOR THIS LOCATION CAN BE THE PLACE WHERE THE PERIMETER ROAD DIPS INTO THE DRAINAGE CHANNEL. THE SECOND ACCESS POINT CONSIDERED IS WHERE THE DITCH CROSSES THE ROAD FROM THE MAIN COMPOUND. SUBCONTRACTORS FEEL THAT THIS LOCATION SHOULD NOT BE TOO DIFFICULT TO GET TO. ALSO INDICATE THAT ONE FISH COLLECTION ZONE WILL BE FROM THIS DOWNSTREAM POINT IN THE DRAINAGE DITCH WHERE THE BOX IS BEING PLACED UPSTREAM TO THE BEAVER POND.

Continued on Page 44

Read and Understood By

  
Signed10/8/94  
Date  
Signed10/14/94  
Date

1415 - MOVING TO LOCATION IN OCCOQUAN BAY, OFF OF  
 - GARD STEPS BY TO ASK IF WE WANTED THE GATE  
 TOMBSTONES OPENED. WE SAID YES BUT TO MEET THERE  
 1500. HE SAID OKAY.

- INDIATE TO SUBCONTRACTORS THAT THE CLAM BOXES  
 SUGGESTED TO BE PLACED IN THE BAY AND TIED OFF  
 A SNAG JUST OFFSHORE.

1430 - MOVING TO DOWNSTREAM LOCATION IN MARUMSLO CREEK

- INDIATE TO SUBCONTRACTORS THAT THE CLAM BOXES  
 SUGGESTED TO BE PLACED AT THE CONFLUENCE OF THE  
 DRAINAGE DITCH WITH MARUMSLO CREEK.
- ALSO NOTED THAT THIS AREA, JUST UPSTREAM AND  
 DOWNSTREAM OF THIS BOX IS ANOTHER FISH COLLECTOR.

1445 - MOVING TO SECOND LOCATION IN MARUMSLO CREEK.

- INDIATE THAT THIS BOX IS TO BE PLACED AT THE  
 DOWNSTREAM POINT WHERE A MEANDOR CUTS BACK  
 THE MAIN CHANNEL. NOTE: CAN NOT REALLY SEE THIS  
 FROM THE PERCELINE.

1500 - MOVING TO LOCATION IN AREA 22 DRAINAGE DITCH  
 UPSTREAM OF CHARLIE ROAD.

- INDIATE THAT THESE BOXES ARE TO BE PLACED AS FAR  
 UPSTREAM AS PRACTICAL.

1505 -

BACK AT GATE NEAR TOMBSTONES, GARD UNLOCKS G  
 AND CHAS LONG AND SUBCONTRACTORS BEGIN CLEARING  
 - KEVIN MCCORMACK GOES WITH GARD TO SEE IF GAT  
 NEAR AREA 1 CAN BE OPENED.

1530 - BRUSH IS CLEAR. MOVING TO GATE NEAR AREA 1.

- BEEN TRYING TO CLEAR BRUSH ONCE GATE IS UNLOCKED.

1545 - IT IS DETERMINED THAT THE BRUSH IS TOO THICK AND  
 SLOPE TOO STEEP TO REALLY CONSIDER THIS FOR  
 ACCESS. WE WILL SEE IF ACCESS CAN BE ACCOMPLISHED AT UPST.  
 LOCATION IN MARUMSLO CREEK.

Continued on P.

Read and Understood By

Chris by  
 Signed

10/8/94  
 Date

Joan Bales  
 Signed

10/11

550 - MOVING TO LOCATION AT BEAVER POND

- INDICATE THAT THIS BOX IS TO BE PLACED JUST WEST OF BEAVER DAM IN THE POND.

605 - MOVING TO LOCATION AT UPSTREAMMOST POINT IN MARSH CREEK.

- INDICATE THAT THIS BOX IS TO BE PLACED AT THE POINT WHERE THE FENCE GOES INTO THE CREEK.
- SUBCONTRACTORS SAY THAT THIS WILL BE THE PLACE THEY WILL ACCESS ALL POINTS IN MARSH CREEK PLUS 17 LOCATION OFF AREA 1 (TOTAL OF 4 POINTS).
- BEGAN CLEARING BRUSH FOR ACCESS

630 - BRUSH IS CLEAR. DECIDE TO MEET TOMORROW AT 09

- EVERYONE OFFSITE FOR DAY

Chris  
10/2/94

Continued on Page

Read and Understood By

Chris  
Signed

10/2/94  
Date

Joan Beales  
Signed

10/14/94  
Date

Sunday October 9, 1974

Weather: sunny, breezy high in 70's

0930 Greg and Gary of Aquatic Systems onsite.  
Load equipment.  
Kathy Tuniga, Chris Long, Kevin McCrea and  
Keith Schenkel onsite. All go to tombstone  
location to prepare equipment.

1030 Gene Maurakis onsite w/ claims. Jeff Briggs  
onsite. Unload claims

1050 Divide claims into 16 baskets.  
250 claims in each. Leave baskets in  
edge of bay.

1150 Sample collected for initial conditions.  
40 claims packaged.

1210 Chris, Gary, Greg go to first 2 sites w/ 4 ba  
Gene offsite. Keith offsite for lunch.  
Kevin goes to get other gate opened.  
Jeff and Kathy watch claims.

1250 Keith delivers lunch. Kevin back to  
pick up claim baskets for next location.

1310 Kevin and Jeff go to deliver baskets to  
boat for Sites 3 & 4.  
Keith and Kathy watch claims.

1330 JEFF BRIGGS OFFSITE FOR DAY

1510 BASKETS AT SITES 1, 2, 3, AND 4 HAVE BEEN DEPL  
EVERYONE BACK AT TOMBSTONE LOCATION TO GET C  
FOR SITES WITHIN AREA 22 (AT BEAVER POND A  
UPSTREAM OF CHARLIE ROAD).

1530 CHRIS, GARY, GREG, KATHY AND KEITH GO TO DEPLOY  
AT SITE UPSTREAM OF CHARLIE ROAD.

Continued on P

Read and Understood By

Kathy Tuniga

Signed

10-9-94

Date

Joan Beales

Signed

141

- 1630 - CHRIS, GARY AND GREG GO TO DEPLOY CLAMS AT BEVER  
- KATHY AND KEITH OFFSITE FOR DAY.
- 1710 - CHRIS, GARY AND GREG BACK AT TOMSTONE LOCATION T.  
GET CLAMS FOR 3RD AREE 22 LOCATION.
- 1720 - CHRIS, GARY AND GREG GO TO DOWNSTREAMMOST LOCATE  
FOR AREE 22 TO DEPLOY CLAMS.  
- KEVEN MCLENNAN WATCHING CLAMS.
- 1815 - CHRIS, GARY AND GREG BACK AT TOMSTONE LOCATION T.  
PREPARE DEPLOYMENT OF CLAMS IN BAY.
- 1830 - GARY AND GREG TAKE BOAT INTO BAY TO DEPLOY CLAMS  
- CHRIS AND KEVEN STAY ONSHORE.
- 1845 - CLAMS ARE DEPLOYED.  
- GARY AND GREG BACK ON SHORE.  
- EVERYONE PACKING UP EQUIPMENT.
- 1915 - EQUIPMENT PACKED  
- GARY AND GREG GO TO DROP OFF BOAT ON MAEN COMA.  
- CHRIS AND KEVEN GO TO MAEN GATE.
- 1930 - CHRIS, KEVEN, GARY AND GREG OFFSITE FOR DAY.

*Chris*  
10/9/94

Continued on Page

Read and Understood By

*Chris*  
Signed

10/9/94  
Date

*Kathy*  
Signed

11-11  
Da



MONDAY OCTOBER 24, 1994

WEATHER: SUNNY, CLEAR, HIGH IN THE 70'S. NOT WINDY

1200 - CHRIS LONG, GARY AND GREG (AQUATEL SYSTEMS, INC) ON SE MAIN GATE.

- TAKE CAR UP TO BRIDGE OVER MARUMSD CREEK.
- MOVE TO GET BOAT.

1220 - CHRIS LONG, GARY AND GREG AT TOMBSTONE LOCATION, 19 METERS, GETTING READY TO SAMPLE.

- GARY OPENS GATE AT TOMBSTONE LOCATION.
- PLANS IS TO SAMPLE LOCATIONS IN BAYS AND MARUMS CREEK BEGINNING AT LOCATION NEAR TOMBSTONES AND END AT UPSTREAMMOST LOCATION IN MARUMSD CREEK. DROVE IN CAR TO GET TRUCK TO BRING BOAT BACK INTO THE FACILITY.

1240 - GREG AND GARY GO OUT TO GET BASKETS OFF SHORE - TOMBSTONE LOCATION. (LOCATION #8)

- COLLECTING WATER QUALITY DATA.

1250 - GREG AND GARY BRING BASKETS ON SHORE TO PROCESS.

1300 - BASKET A - 84 DEAD COLLECTED FOR SAMPLE  
(HAS TIE) - 20 LIVE COLLECTED FOR SAMPLE

BASKET B - 119 DEAD COLLECTED FOR SAMPLE  
(NO TIE) - 20 LIVE COLLECTED FOR SAMPLE

1310 - GARY RETIING BASKETS CLOSED. GREG DOING PAPERWORK

1315 - GARY AND GREG TAKING BASKETS BACK OUT INTO BAY

1320 - CHRIS, GARY AND GREG MOVING TO NEXT LOCATION. LOCATION IN BAY OFF OF AREA 1. (LOCATION #4)

Continued on P.

*Chf hy*  
Signed

10/24/94  
Date

Read and Understood By

*Kathy J...*  
Signed



1395 - ARRIVED AT LOCATION IN BAY CFF AREA 1. RETRIEVED AND BROUGHT THEM TO SHORE FOR SAMPLING (LOCATION #4)

- GARY COLLECTING WATER SAMPLES FOR WATER QUALITY DATA

1355 - BASKET A - 33 DEAD COLLECTED FOR SAMPLE

(HAS TIE) - 20 LIVE COLLECTED FOR SAMPLE

BASKET B - 37 DEAD COLLECTED FOR SAMPLE

(NO TIE) - 20 LIVE COLLECTED FOR SAMPLE

1400 - GARY RETIEING BASKETS CLOSED, GREG DOING PAPERWORK

1405 - GARY AND GREG TAKING BASKETS BACK OUT INTO THE BAY

1410 - CHRES, GARY AND GREG MOVING TO NEXT LOCATION. THE C OF DRAINAGE DITCH FROM LANDFILLS WITH MARUMSCO CREEK

1415 - ARRIVED AT LOCATION AT CONFLUENCE OF DRAINAGE C FROM LANDFILLS WITH MARUMSCO CREEK (LOCATION #3)

- GARY COLLECTING WATER QUALITY SAMPLES

- GREG PULLS BASKETS INTO BOAT.

1420 - GREG COLLECTING SAMPLES FROM BASKET A (WITH TIE), CH COLLECTING SAMPLES FROM BASKET B (NO TIE)

1425 - BASKET A - 22 DEAD COLLECTED FOR SAMPLE

(HAS TIE) - 20 LIVE COLLECTED FOR SAMPLE

BASKET B - 35 DEAD COLLECTED FOR SAMPLE

(NO TIE) - 20 LIVE COLLECTED FOR SAMPLE

1430 - GREG PLACING BASKETS IN WATER AFTER TIEING THEM

- MOVING UPSTREAM TO LOCATION #2

1445 - ARRIVED AT LOCATION #2

- GARY COLLECTING WATER QUALITY DATA

- GREG PULLING UP BASKETS INTO BOAT. NOTE: LINE FROM HAS BEEN CUT, MAY HAVE BEEN FROM BEAVER. BASKETS WERE ALSO QUITE DAMAGED, NUMEROUS ROPES WERE CUT OR APPEARED TO BE GNAWED THROUGH BY BEAVER

Continued on Page

Read and Understood By

*Chf by*  
Signed

10/24/94

Date

*Kathy Quinn*  
Signed

11-11-

C

1950 - COLLECTING SAMPLES FROM BASKETS. CHRIS COLLECTING BASKET A, GREG COLLECTING FROM BASKET B

1455 - BASKET A - ~~11~~ <sup>10/24/14</sup> 198 DEAD COLLECTED FOR SAMPLE

(HAS TIE) - 10 LIVE COLLECTED FOR SAMPLE

BASKET B - 6 DEAD COLLECTED FOR SAMPLE

(NOT TIE) - 20 LIVE COLLECTED FOR SAMPLE

1510 - GREG PLACING BASKETS BACK INTO WATER AFTER THINKING CLOSED AND RETIEING LEADERS TO BASKETS

- MOVING UPSTREAM TO LOCATION #1

10/24/14

1530 - ~~ALL~~ ARRIVE AT LOCATION #1

- GARY COLLECTING WATER QUALITY SAMPLES

- GREG LOOKING FOR BASKETS WITH HOOK, LEADER TO FROM FENCE IS NO LONGER THERE.

1535 - DECIDE TO DRAG THE AREA FOR THE BASKETS.

1540 - LOCATED THE BASKETS. GREG PULLING THEM ONTO THE

1545 - COLLECTING SAMPLES FROM BASKETS. CHRIS COLLECTING BASKET A, GREG COLLECTING FROM BASKET B.

1550 - BASKET A - 170 DEAD COLLECTED FOR SAMPLE

(HAS TIE) - 10 LIVE COLLECTED FOR SAMPLE

BASKET B - 169 DEAD COLLECTED FOR SAMPLE

(NO TIE) - 10 LIVE COLLECTED FOR SAMPLE

1555 - GREG PLACES BASKETS BACK IN WATER AFTER RETIEING <sup>REPLACING</sup> BASKETS OF

1600 - GARY AND CHRIS GO TO PICK UP TRUCK AND TRAILER

- GREG ORGANIZING EQUIPMENT AT BRIDGE

1615 - GARY AND CHRIS BACK AT BRIDGE TO COLLECT EQUIPMENT.

1630 - EQUIPMENT LOADED

- GARY, GREG AND CHRIS GO TO EARTH TECH TRAILER SHUCK DEAD CLAMS AND TITRATE WATER SAMPLES.

Continued on P.

Read and Understood By

Chif Ly  
Signed

10/24/14

Date

Lithy J. J. J.  
Signed

OBJECT WOODBRIDGE SI/RI

1740 - COMPLETED SHUCKING DEAD CLAMS. THE FOLLOWING WERE  
 WERE COUNTED; FOR DEAD TISSUE SAMPLE (OTHERS WERE  
 empty

LOCATION	BASKET	NUMBER
1	A	166
1	B	158
2	A	166
2	B	5
3	A	13
3	B	21
4	A	28
4	B	29
8	A	69
8	B	106

1750 - FINISHED CLEANING UP SITE. MOVING BOAT TO BEHIND  
 BUILDING 201.

1800 - EVERYONE OFFSITE FOR DAY

10/24/94

Continued on Page

Read and Understood By

Chiff Ly  
 Signed

10/24/94  
 Date

Kathy J. J. J.  
 Signed

11/14  
 D

TUESDAY OCTOBER 25, 1994

WEATHER: CLEAR, COOL, HIGH IN LOW 50'S @ 0730.  
FORECAST CLEAR WITH HIGH IN THE LOW 70'S.

0730 - CHES LONG O/SITE AT MAIN GATE.

- TRYING TO FIX CAMERAS. DROPPED THE ONE HAD YESTERDAY IN WATER AT LOCATION #2. BOTH CAMERA FILM FROM YESTERDAY ARE PROBABLY TRASH NOW. CA BROUGHT TODAY DOESN'T APPEAR TO BE WORKING. PUT 2 BATTERIES IN STILL NOT WORKING. BOUGHT A DISPOSABLE CAMERA IN CASE CAN NOT GET THIS CAMERA WORKING.

0810 - GARY AND GREG (AQUATIC SYSTEMS, INC.) ON SITE AT MAIN GATE.  
- STEW IN AND MOVE TO PICK UP THE BOAT.

0820 - MOB TO LOCATION #5 (DOWNSTREAM MOST LOCATION IN DRAINAGE DITCH (AREA 22)).

(STAGING AREA)

0825 - ARRIVE AT LOCATION #5. CALIBRATING METERS AND ORGANIZING EQUIPMENT AT ROAD CROSSING DOWNSTREAM OF LOCATION #5. TO JUST WALK IN, INSTEAD OF USING THE BOAT DUE TO IT LOW TIDE.

0840 - READY TO WALK IN TO LOCATION #5. DECIDE TO MOVE TO WELL HOUSE AND WALK IN.

0845 - LEAVE VEHICLES AT WELL HOUSE AND WALK IN TO LOC.

0850 - ARRIVE AT LOCATION #5.

- GARY AND GREG COLLECTING WATER QUALITY DATA.

0855 - FINISH COLLECTING WATER QUALITY DATA

- GARY AND GREG RETRIEVING BASKETS

0900 - BASKETS PULLED TO SHORE FOR SAMPLING. GARY

Continued on Page \_\_\_\_\_

COLLECTED SAMPLES FROM BASKET A, GREG COLLECTING FROM BASKET B.  
Read and Understood By

*Chaf*  
Signed

10/25/94  
Date

*Kelley Junior*  
Signed

11/

JECT WOODBRIDGE SE/RI

0915 - BASKET A - 180 DEAD COLLECTED FOR SAMPLE

(HAS TIE) - 10 LIVE COLLECTED FOR SAMPLE

BASKET B - 62 DEAD COLLECTED FOR SAMPLE

(NO TIE) - 20 LIVE COLLECTED FOR SAMPLE

- RETIEING BASKETS CLOSED

- GREG AND GARY PLACING BASKETS BACK IN WATER

- PACKING UP EQUIPMENT.

0920 - LEAVING LOCATION #5

0925 - BACK AT VEHICLES

- PREPARING TO MOVE TO LOCATION #7. (UPSTREAM MUST LEAVE IN DRAINAGE DITCH (AROE 22)).

0930 - CHRIS GOES TO TRAILER TO GET ANOTHER COOLER.

- GARY AND GREG GO TO LOCATION #7 TO START SAMPLING

0935 - GARY AND GREG COLLECTING WATER QUALITY DATA

- CHRIS AT LOCATION #7.

0940 - FINISH COLLECTING WATER QUALITY DATA

- GARY AND GREG RETIEING BASKETS

0945 - BASKETS PULLED TO SHORE FOR SAMPLING: GARY COLLECTS SAMPLES FROM BASKET A, GREG COLLECTING FROM BASKET

0950 - BASKET A - 250 DEAD COLLECTED FOR SAMPLE

(HAS TIE) 0 LIVE COLLECTED FOR SAMPLE

BASKET B - 250 DEAD COLLECTED FOR SAMPLE

(NO TIE) 0 LIVE COLLECTED FOR SAMPLE

100%

MORTALITY

0955 - PACKING UP EQUIPMENT AND HEADING FOR NEXT LOCATION  
LOCATION #6 IS LAST LOCATION WHICH IS AT THE BEACH

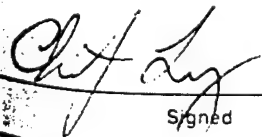
1005 - ARRIVE AT LOCATION #6

- GARY AND GREG PREPARING EQUIPMENT

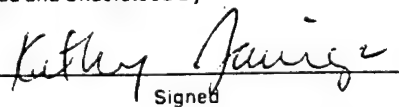
- GARY GOES TO COLLECT WATER QUALITY DATA

Continued on Page

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1010 - CHRIS AND GREG PUT BOAT IN WATER

1015 - GARY AND GREG IN BOAT ROWING TO LOCATION OF BASKETS  
- LINE FROM SHORE HAS BEEN CUT. GARY ATTEMPTING TO FIND LINE/BASKETS BY DRAGGING WITH A HOOK

1020 - LINE HAS BEEN FOUND. DECIDE TO TAKE LINE TO DAM AND THE LINES TO SHORE

- BASKETS ARE FULL OF SILT. GARY AND GREG TAKE BASKETS DOWNSTREAM OF DAM TO WASH OUT SILT FROM BASKETS.  
- WHEN PREPARE SAMPLES ON BEAVER DAM. GREG COLLECTING SAMPLES FROM BASKET A, GARY COLLECTING SAMPLES FROM BASKET B.

1035 - BASKET A - 226 DEAD COLLECTED FOR SAMPLE  
(HIS TIE) - 10 LIVE COLLECTED FOR SAMPLE  
BASKET B - 191 DEAD COLLECTED FOR SAMPLE  
(HIS TIE) - 10 LIVE COLLECTED FOR SAMPLE  
- GARY AND GREG RETIE BASKETS.

1040 - PLACING BASKETS BACK IN WATER. DECIDE NOT TO TIE TO SHORE SINCE CAN EASILY FIND BASKETS BY DRAGGING FOR  
- MOVING TO TRUCK TO LOAD EQUIPMENT AND BOAT.

1045 - FINISHED PACKING EQUIPMENT. TAKING BOAT BACK TO 3201, THEN TO TRAILER TO SHUCK DEAD CLAMS AND WATER SAMPLES.  
- GARY DECIDES TO TITRATE SAMPLES AT BEAVER DAM LOCAR

1100 - GARY FINISHES THE TITRATIONS  
- GREG AND GARY GO TO DROP OFF BOAT AT BUILDING 2  
- CHRIS GOES TO TRAILER TO SET UP SHUCKING STATION

1120 - GREG AND GARY AT TRAILER TO SHUCK DEAD CLAMS.  
- CHRIS, GREG AND GARY SHUCKING DEAD CLAMS.

Continued on P

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*Kerby J. J. J.*  
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1225 - COMPLETED SHUCKING DEAD CLAMS. THE FOLLOWING NUM  
OF TISSUE WERE COUNTED FROM DEAD CLAMS

LOCATION	BASKET	NUMBER
5	A	143
5	B	47
6	A	222
6	B	179
7	A	246
7	B	250

1230 - FINISHED CLEANING UP SITE  
- EVERYONE OFFSITE.

10/25/94

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11/14  
D

TUESDAY NOVEMBER 1, 1994

WEATHER: RAINY, HIGH IN THE 60'S

1000 - CHRIS LONG AND KEITH SCHENKER ONSITE TO MOVE EQUIPMENT FROM TRAILER TO STORAGE ROOM IN BUI 211.

1230 - CHRIS LONG AND KEITH SCHENKER OFFSITE FOR LUNCH AFTER MOVING TWO LOADS INTO STORAGE ROOM.

1330 - CHRIS LONG AND KEITH SCHENKER BACK ONSITE. IT RAINING VERY HARD WITH LARGE HAIL. WE RIDE STORM OUT AT THE MAIN GATE.

1345 - CHRIS LONG AND KEITH SCHENKER RESUME MOVING EQUIPMENT.

1500 - CHRIS LONG AND KEITH SCHENKER FINISHED MOVING EQUIPMENT AND LEAVE SITE FOR DAY.

*Chris Long*  
11/1/94

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11/1/94



CL 11/7

MONDAY NOVEMBER 7, 1994

WEATHER: SUNNY, CLEAR, BREEZY, HIGH IN THE 70'S FORECAST.

1000 - CHRIS LONG ONSITE AT MAIN GATE WAITING FOR SUBCONTRACTORS (AQUATEL SYSTEMS, INC)

1030 - GARY AND GREG ONSITE (AQUATEL SYSTEMS, INC)

- MOVING ONE CAR NEAR LOCATION #1 AND GOING TO GET BOAT BY BUILDING 201.

1045 - ARRIVE AT BUILDING 201. GARY AND GREG HOOKING UP BOAT.

1055 - MOVE TO TOMBSTONE AREA TO LAUNCH BOAT NEAR LOCATION.

1100 - GARY, GREG AND CHRIS AT TOMBSTONE AREA ORGANIZING EQUIPMENT AND WAITING FOR GUARD TO OPEN GATE.

1110 - GUARD ARRIVES TO UNLOCK GATE. STILL ORGANIZING EQUIP.

1120 - EQUIPMENT READY. GARY AND GREG LAUNCHING BOAT AT (NEAR TOMBSTONES).

- WILL FOLLOW SAME SAMPLING ORDER AS LAST TIME.

1130 - ARRIVE AT LOCATION #8. GARY AND GREG RETRIEVE BASKETS. CHRIS WAITING ON SHORE. WILL COLLECT SAMPLES SHORE.

1135 - BASKETS BROUGHT TO SHORE. GARY COLLECTING SAMPLES FROM BASKET A, GREG COLLECTING SAMPLES FROM BASKET B.

1140 - BASKET A - 12 DEAD COLLECTED FOR SAMPLE (HAS TIE) - 20 LIVE COLLECTED FOR SAMPLE

BASKET B - 11 DEAD COLLECTED FOR SAMPLE (WITHOUT TIE) - 20 LIVE COLLECTED FOR SAMPLE

- BASKETS RETIED CLOSED

1145 - GARY AND GREG TAKING BASKETS BACK OUT INTO BAY

- GARY COLLECTING WATER QUALITY SAMPLES.

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11/7/94

Date

*Kathy Javign*  
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1150 - KATHY JANIGA ON SITE AT LOCATION #8.

1155 - KATHY JANIGA GOES TO MAIN <sup>CLINT</sup> ~~COMPAR~~ GATE TO PICK UP ALFRED PINCKNEY OF US FISH AND WILDLIFE. CHRIS LONG TELLS KATHY THAT THE NEXT LOCATION TO BE COMPLETED IS LOCATION #4, THE LOCATION IN THE BAY OFF AREA 1.

- CHRIS LONG, GARY, AND GREG HOP IN BOAT AND START TOWARDS LOCATION #4.

1225 - CHRIS LONG, GARY, AND GREG ARRIVE AT LOCATION #4.

- GARY COLLECTING WATER QUALITY SAMPLES/DATA.

1230 - BASKETS RETRIEVED. THE TIDE IS EXTREMELY LOW SO WE ARE PROCESSING THE SAMPLES AT THE BASKET LOCATION. WE'LL ADD SOME LIME LATER AND TAKE THEM OUT FURTHER.

- GARY COLLECTING SAMPLES FROM BASKET A, GREG COLLECTS SAMPLES FROM BASKET B.

1235 - BASKET A - 1 DEAD COLLECTED FOR SAMPLE.

(HAS TIE) - 20 LIVE COLLECTED FOR SAMPLE.

BASKET B - 3 DEAD COLLECTED FOR SAMPLE.

(W/ TIE) - 20 LIVE COLLECTED FOR SAMPLE.

- KATHY JANIGA AND DR. PINCKNEY ON SITE AT LOCATION # INSIDE FENCE.

1240 - CHRIS LONG GOES TO TALK TO DR. PINCKNEY WHILE GARY AND GREG RETIE BASKETS AND ADD ADDITIONAL TO BASKETS TO TAKE THEM FURTHER OUT TO COMPLETELY SUBMERGE BASKETS.

1245 - MOVING TO LOCATION #3

1255 - BECAUSE OF LOW TIDE, MANEUVERING UPSTREAM THROUGH MARUMSCO CREEK IS DIFFICULT.

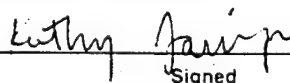
- ARRIVE AT LOCATION #3

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SUBJECT WOODBRIIDGE SI/RE

- 300 - GARY COLLECTING WATER QUALITY SAMPLES/DATA.  
- GREG WAITS UNTIL SAMPLES ARE COLLECTED THEN RETRIEVES BASKETS AT LOCATION #3  
- BASKETS RETRIEVED, GREG COLLECTING SAMPLES FROM BASKET CHRIS COLLECTING SAMPLES FROM BASKET B.
- 310 - BASKET A - 4 DEAD COLLECTED FOR SAMPLE (HAS TIE) 20 LIVE COLLECTED FOR SAMPLE  
BASKET B - 2 DEAD COLLECTED FOR SAMPLE (NO TIE) 20 LIVE COLLECTED FOR SAMPLE
- 315 - CHRIS AND GREG RETIE BASKETS  
- GREG PLACES BASKETS BACK IN WATER  
- MOVING TO LOCATION #2
- 1345 - ARRIVE AT LOCATION #2 AFTER A VERY DIFFICULT JOURNEY DUE TO THE LOW WATER.  
- CHRIS, GARY, AND GREG GO TO SHORE TO DISCUSS EVENTS WITH KATHY AND DR. PINCHNEY.  
- DECIDE TO RETRIEVE BASKETS AND BRING THEM TO SHORE & DR. PINCHNEY CAN LOOK AT THE BASKETS/CLAMS.
- 1355 - GREG AND GARY GO TO COLLECT WATER QUALITY SAMPLES AND RETRIEVE THE BASKETS
- 1400 - GARY COLLECTING SAMPLES FROM BASKET A AND GREG COLLECTING SAMPLES FROM BASKET B.
- 1405 - BASKET A - 1 DEAD COLLECTED FOR SAMPLE (HAS TIE) - 10 LIVE COLLECTED FOR SAMPLE  
BASKET B - 4 DEAD COLLECTED FOR SAMPLE (NO TIE) - 20 LIVE COLLECTED FOR SAMPLE
- 1410 - GARY AND GREG RETIEING BASKETS. AND ALSO RETIEING SOME THE ROPES.
- 1415 - BASKETS PLACED BACK IN WATER AND EVERYONE MOVING TO LOC #1.

Continued on Page (

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Date

1430 - EVERYONE ARRIVES AT LOCATION #1

- GREG AND GARY COLLECTING WATER QUALITY DATA/SAMPLES

1435 - GREG RETRIEVING BASKETS. ONCE AGAIN THE ROPES AT LOCATION HAVE BEEN CHAINED THROUGH AND GREG MUST TRY THE BASKETS.

1440 - BOTH BASKETS RETRIEVED AND PLACED IN BOAT FOR SAMPLE PROCESSING. GREG SAMPLING BOTH BASKETS.

1445 - BASKET A - 55 DEAD COLLECTED FOR SAMPLE (HAS ICE) 10 LIVE COLLECTED FOR SAMPLE (11 REMAIN)  
BASKET B - 29 DEAD COLLECTED FOR SAMPLE (NO ICE) 10 LIVE COLLECTED FOR SAMPLE

1450 - GREG RETIEING BASKETS CLOSED AND PLACING BASKETS BACK INTO WATER.

- GREG AND GARY BRING THE BOAT TO SHORE TO REMOVE IT FROM THE WATER.

1500 - CHRIS LONG, GARY, KATHY JANZBA AND DR. PENCKNEY TO GET TRUCK AND TRAILER FOR BOAT.

1510 - EVERYONE BACK AT LOCATION #1 TO LOAD BOAT AND EQUIPMENT.

1520 - MOVING TO LOCATION #6 (BEAVER POND)

1530 - EVERYONE AT THE BEAVER POND (LOCATION #6). G AND GREG COLLECTING THE WATER QUALITY SAMPLES.

1540 - DR. PENCKNEY LEAVES FOR THE DAY.

- GREG AND GARY TAKE BOAT TO RETRIEVE CLAMS.

- CHRIS AND KATHY ON THE BEAVER DAM.

1545 - BASKETS PULLED OUT OF WATER. GARY PROCESSING SAMPLES FOR BASKET A, GREG COLLECTING FROM BASKET B.

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550 - BASKET A - 12 DEAD COLLECTED FOR SAMPLE  
 (HAS TRE) - 0 LIVE COLLECTED FOR SAMPLE (2 REMAINING ADDED BASKET B)  
 BASKET B - 23 DEAD COLLECTED FOR SAMPLE  
 (NO TRE) - 10 LIVE COLLECTED FOR SAMPLE (18 REMAINING 2 FROM BASKET A)  
 - BASKET A REMOVED AND BASKET B PLACED BACK IN WATER.

555 - GREG AND GARY MOVING BACK TO EDGE OF POND TO LOAD TR

600 - EVERYONE MOVING TO LOCATION #5.

1605 - AT THE PUMPHOUSE #1, GUARD STOPS BY AND ASKS IF WE CAN HELP A BIRD THAT IS INJURED. WE ALL GO TO HELP.

1615 - BIRD HAS A LURE CAUGHT IN ITS WING. GREG AND GARY CATCH BIRD, REMOVE LURE THEN RELEASE BIRD.  
 - MOVING BACK TO PUMPHOUSE #1

1620 - AT PUMPHOUSE #1, GREG AND GARY GETTING EQUIPMENT TOGETHER.

1625 - MOVING TO LOCATION #5.

1630 - EVERYONE AT LOCATION #5. GARY COLLECTING WATER QUALITY SAMPLES. GREG RETRIEVING BASKETS. GREG COLLECTING SAMPLES FROM BASKET A. GARY COLLECTING SAMPLES FROM BASKET B.

1635 - BASKET A - 3 DEAD COLLECTED FOR SAMPLE  
 (HAS TRE) - 10 LIVE COLLECTED FOR SAMPLE  
 BASKET B - 4 DEAD COLLECTED FOR SAMPLE  
 (NO TRE) - 20 LIVE COLLECTED FOR SAMPLE

1640 - GREG PLACES BASKETS BACK IN WATER AFTER TIEING THEM CL  
 - MOVING BACK TO VEHICLES.

1645 - EVERYONE BACK AT THE VEHICLES. GARY FINISHING THE WATER QUALITY SAMPLING

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PROJECT WOODBRIDGE SE/REContinued From Page 61

1650 - MOVING TO BUILDING 211 TO SHUCK DEAD CLAMS  
TITRATE WATER SAMPLES

1655 - AT BUILDING 211. KATHY JANIGA, CHRIS LONG, AND  
GREG SHUCKING. GARY TITRATING.

1715 - COMPLETED SHUCKING DEAD CLAMS. THE FOLLOWING  
NUMBERS WERE COUNTED (TISSUE COLLECTED) - OTHERS EL

LOCATION	BASKET	NUMBER
1	A	42
1	B	9
2	A	1
2	B	3
3	A	1
3	B	0
4	A	0
4	B	0
5	A	0
5	B	0
6	A	12
6	B	23
8	A	1
8	B	6

- GARY STILL TITRATING WATER SAMPLES. KATHY, CHRIS,  
GREG CLEANING UP AND PUTTING EQUIPMENT AWAY.

1745 - FINISHED CLEANING UP AND PUTTING EQUIPMENT AWAY AND  
MOVING TO PUT THE BOAT AWAY.

1800 - FINISHED STORING EQUIPMENT/BOAT. EVERYONE OFFSITE FOR

*Chris Long*  
11/7/94

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11/7/94  
Date

*Kathy Janiga*  
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11/7/94

TUESDAY NOVEMBER 8, 1994

WEATHER: SUNNY, CLEAR, COOL, HIGH OF 50°F. FORECAST OF SUNNY AND CLEAR WITH HIGHS IN THE UPPER 60'S.

1745 - KATHY SAWGA ONSITE AT MAIN GATE

1750 - GREG AND GARY ONSITE AT MAIN GATE

1755 - CHRIS LONG ONSITE AT MAIN GATE

1800 - GO TO PICK UP EQUIPMENT / BOAT

1815 - FINISHED GETTING EQUIPMENT / BOAT. GARY AND GREG WANT TO TAKE WATER QUALITY SAMPLES / DATA FROM LOCATION #7 EVEN THOUGH THERE WEREN'T ANY CLAMS LEFT TO SAMPLE THERE. THIS IS FOR CONSISTENCY. MOVING TO LOCATION #

1830 - GARY AND GREG FINISH COLLECTING WATER QUALITY SAMPLES / DATA FROM LOCATION #7. MOVING TO POND TO CATCH SOME FISH

1835 - EVERYONE AT THE POND. SETTING UP EQUIPMENT.

1845 - EVERYTHING IS READY. THE PLAN IS TO DEPLOY A SEAMER ACROSS THE POND AND DRAG 1/2 OF THE POND THEN DO THE OTHER HALF. GARY AND GREG IN THE BOAT DEPLOYING SEAMER, CHRIS AND KATHY ON SHORE HOLDING THE ENDS OF THE

1830 - AFTER SIEVING THE POND 5 TIMES, WE DECIDE TO TAKE A BREAK AND SEE WHAT WE HAVE AND WHAT WE STILL NEED FROM THE POND.

- ONE OF THE LARGEMOUTH BASS CAUGHT HAD A U.S. FISH WILDLIFE TAG WITH A TELEPHONE #. CHRIS LONG CALLS 7 NUMBER AND GIVES THEM THE INFO. ON THE FISH AND 7 THEM THAT WE ARE RELEASING IT. SHE SAID SOMEONE MAY TO GET MORE INFO. ON THE FISH.

Continued on Page

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11/8/94

Date

Kathy Sawga  
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11/14

1100 - THE FOLLOWING WAS RECORDED FOR THE FISH:

LARGemouth BASS (8 CAUGHT, 5 KEPT, SEE BELOW)

① LENGTH = 410 mm

② LENGTH = 390 mm

③ LENGTH = 403 mm

④ LENGTH = 356 mm

⑤ LENGTH = 283 mm

⑥ LENGTH = 295 mm

⑦ LENGTH = 285 mm

⑧ LENGTH = 294 mm

THESE WERE KEPT

BLUEGILL (15 CAUGHT, 10 LARGEST KEPT\*, SEE BELOW FOR 2)

① LENGTH = 203 mm

② LENGTH = 201 mm

③ LENGTH = 200 mm

④ LENGTH = 200 mm

⑤ LENGTH = 192 mm

⑥ LENGTH = 198 mm

⑦ LENGTH = 191 mm

⑧ LENGTH = 185 mm

⑨ LENGTH = 179 mm

⑩ LENGTH = 175 mm

\* 10 WERE KEPT DUE TO THE 5 LARGEST POSSIBLY NOT THE AMOUNT OF TISSUE PER FISH REQUIRED (50 g.), AND 10 THE MAXIMUM NUMBER ALLOWED TO COLLECT PER OUR

CATFISH (2 CAUGHT, 2 KEPT\*, SEE BELOW)

① LENGTH = 410 mm

② LENGTH = 392 mm

WHITE BASS (2 CAUGHT, 2 RELEASED DUE TO NOT NEEDING TH

1125 - DECIDE TO TRY SINKING THE REMAINING SHALLOW PORTION POND TO TRY TO GET 3 MORE CATFISH FOR SAMPLES. IF DOESN'T WORK, WE WILL DEPLOY A NET AND LET IT SIT NIGHT AND CHECK TOMORROW MORNING

Continued on

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1155 - MORE SPENDING DID NOT CATCH ANY MORE CATFISH. GARY AND GREG DECIDE TO DEPLOY GILL NETS THEN RETRIEVE THEM TOMORROW.

1200 - GARY AND GREG OUT ON BOAT SETTING 3 GILL NETS

1215 - GARY AND GREG COMPLETE DEPLOYING ALL 3 GILL NETS.  
- DECIDE TO TAKE LUNCH THEN MOVE ON TO AREA 22 DITCH FISHING LOCATION.

1220 - KATHY JANIGA AND CHRIS LONG OFFSITE TO GET CAMERA.  
- GARY AND GREG STAY AT POND TO EAT LUNCH.

1240 - KATHY JANIGA AND CHRIS LONG BACK ONSITE TO EAT LUNCH

1250 - GARY AND GREG SETTING UP EQUIPMENT FOR AREA 22 DITCH FISHING LOCATION.

1300 - CHRIS LONG AND KATHY JANIGA GO TO BUILDING 211 TO GO TO MEET GARY AND GREG AT PUMPHOUSE #1 TO COLLECT FISH IN DRAINAGE DITCH (AREA 22).

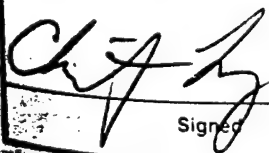
1315 - DRAG BOAT TO CREEK FROM PUMPHOUSE #1. GREG AND I WILL SHOCK FISH IN FRONT OF BOAT AND CHRIS LONG WILL PUSH BOAT UPSTREAM. KATHY JANIGA ONSHORE COLLECTING PICTURES.

1500 - FINISHED STRETCH OF DITCH FROM CLAM BOX LOCATION #5 CLAM BOX LOCATION #6 (BEAVER POND). DID NOT GET VERY MANY LARGE FISH. WE WILL SHOCK UPSTREAM OF THE BEAVER POND TRY TO COLLECT REMAINING FISH FOR THESE SAMPLES AT THE AREA.

- GARY AND CHRIS GO TO GET VEHICLES. KATHY AND GREG UP EQUIPMENT IN BEAVER POND.

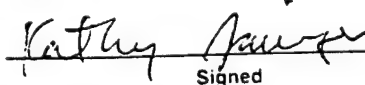
1515 - GARY AND CHRIS BACK AT BEAVER POND WITH VEHICLES. BEGAN UPSTREAM OF BEAVER DAM. GARY ROWING BOAT UPSTREAM, GREG AND CHRIS SHOCKING

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1600 - SHOOTING OF AREA UPSTREAM OF BEAVER DAM COMPLETE  
EVERYONE PROCESSING THE SAMPLES FOR THIS AREA. THE FOL  
WAS RECORDED FOR THE FISH:

LARGemouth BASS (8 CAUGHT, 6 KEPT, SEE BELOW)

- ① LENGTH = 229 mm
  - ② LENGTH = 242 mm
  - ③ LENGTH = 266 mm
  - ④ LENGTH = 253 mm
  - ⑤ LENGTH = 239 mm
  - ⑥ LENGTH = 223 mm
  - ⑦ LENGTH = 165 mm
  - ⑧ LENGTH = 155 mm
- THESE WERE KEPT

CARP (COMMON) (3 CAUGHT, 3 KEPT, SEE BELOW)

- ① LENGTH = 310 mm
- ② LENGTH = 363 mm
- ③ LENGTH = 289 mm

BLUEGILL (MANY CAUGHT, 10 LARGEST KEPT, SEE BELOW)

- ① LENGTH = 166 mm
- ② LENGTH = 140 mm
- ③ LENGTH = 145 mm
- ④ LENGTH = 159 mm
- ⑤ LENGTH = 138 mm
- ⑥ LENGTH = 129 mm
- ⑦ LENGTH = 127 mm
- ⑧ LENGTH = 127 mm
- ⑨ LENGTH = 126 mm
- ⑩ LENGTH = 125 mm

BLACK CRAPPY (5 CAUGHT, 5 KEPT, SEE BELOW)

- ① LENGTH = 170 mm
- ② LENGTH = 152 mm
- ③ LENGTH = 189 mm
- ④ LENGTH = 182 mm
- ⑤ LENGTH = 190 mm

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11/8/94  
Date

Kathy J. Jiriga  
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EEL (8 CAUGHT, 7 KEPT, SEE BELOW)

① LENGTH = 285 mm

② LENGTH = 286 mm

③ LENGTH = 273 mm

④ LENGTH = 271 mm

⑤ LENGTH = 253 mm

⑥ LENGTH = 225 mm

⑦ LENGTH = 210 mm

⑧ LENGTH = 170 mm

THESE WERE KEPT.

1655 - FINISHED PROCESSING SAMPLES. CLEANING/ PACKING UP.

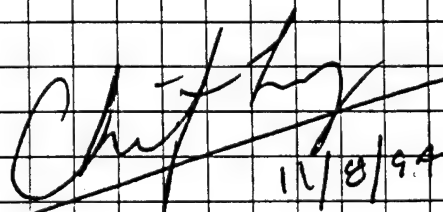
1705 - FINISHED CLEANING/ PACKING UP. GARY AND GREG GO TO G  
SCENE FROM POND AREA AND CHRIS AND KATHY GO TO DROP  
KATHY OFF AT MAIN GATE.

1715 - KATHY SANDEA OFFSITE FOR DAY.

- CHRIS LONG GOES TO BUILDING 211 TO DROP OFF EQUIPMENT  
TALK TO TODD WALTMAYER ABOUT USING THE BAY IN BUILD  
211 TO DRY OUT SCENE. TODD SAYS OKAY.1725 - ALL EQUIPMENT IN STORAGE ROOM. GARY AND GREG DEL  
WHIT UNTIL TOMORROW TO LAY OUT SCENE IN BAY OF  
211 TO DRY.

- MOVE BOAT TO BEHIND BUILDING 201.

1735 - EVERYONE OFFSITE FOR DAY

  
11/8/94

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Signed11/8/94  
Date  
Signed11/14/94  
De

WEDNESDAY NOVEMBER 9, 1994

WEATHER: SUNNY, CLEAR, WARM, HIGH IN THE 50'S. F:  
FOR THE TEMPERATURE TO RISE INTO THE LOW 70'S

0730 - CHRIS LONG ONSITE AT MAIN GATE.

0745 - KATHY JANIGA ONSITE AT MAIN GATE.

0750 - GREG AND GARY ONSITE AT MAIN GATE.

- EVERYONE GOES TO PICK UP BOAT AND EQUIPMENT

0805 - EVERYONE MOVING TO POND.

- GREG AND GARY SAY THEY WILL GO OUT IN BOAT AND  
UP THE NETS AND GATHER THE FISH IN THE BOAT THEN  
THEM BACK TO SHORE FOR PROCESSING. SAMPLES

0810 - ORGANIZING THE EQUIPMENT AT THE POND.

0820 - GREG AND GARY LAUNCH BOAT AND PREPARE TO PULL UP

0825 - GREG AND GARY BEGIN PULLING UP FIRST NET.

0835 - FIRST NET PULLED IN, GREG AND GARY MOVE TO SECOND NET

0845 - SECOND NET PULLED IN, GREG AND GARY MOVE TO THIRD

0850 - THIRD NET PULLED IN, GREG AND GARY ARE REDEPLOYING  
NETS. IT APPEARS THEY ONLY CAUGHT ONE CATFISH AND W  
TO GET THREE.

0900 - ALL THREE NETS ARE RESET, GREG AND GARY BACK  
TO PROCESS FISH CAUGHT. THEY SAY THEY ONLY GOT  
CATFISH BUT ALSO ANOTHER SPECIES (WHITE PERCH) WHICH  
KEEP. SEE NEXT PAGE FOR RECORD OF FISH KEPT:

Continued on Pa

*Chf Ry*  
Signed

11/9/94

Date

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*Kathy Janiga*  
Signed

CATFISH (1 CAUGHT, 1 KEPT, SEE BELOW)

① LENGTH = 432 mm

WHITE PERCH (6 CAUGHT, 6 KEPT, SEE BELOW)

① LENGTH = 241 mm

② LENGTH = 216 mm

③ LENGTH = 222 mm

④ LENGTH = 223 mm

⑤ LENGTH = 212 mm

⑥ LENGTH = 224 mm

0925 - PACKING UP EQUIPMENT. GETTING READY TO MOVE TO MARUMSCO CREEK.

0950 - Pat (Guard) opens gate to bay. Gary and Greg put boat in water load up boat w/ supplies, nets. Put in van.

1005 - Gary and Greg and Chris drive boat along bay to creek. Kathy takes van to ridge to watch fishing.

1030 - Gary, Greg and Chris enter MarumSCO Creek and start fishing with nets - set up net at base of working way up creek - electro fishing

1200 Gary goes under fence - They caught some perch but fish water is deep, that fish are not being shocked. Gary and Kathy go get truck. They will set in nets.

1215 Lunch break.

1250 Lunch over. Get equipment out to set nets.

1310 At mouth of creek, drag net to shore to capture fish (seining)

1330 Quit seining at <sup>mouth</sup> creek to land to get nets to set. Try again upstream.

Continued on Pa

Kathy Janiga

Signed

11-9-94

Date

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Chris

Signed

11/1



1400 Gary, Greg, and Chris dock boat. Process caught.

White Perch (17 caught, 10 kept, see below) \*

①	Length =	181 mm	
②	"	175	
③	"	182	
④	"	166	
⑤	"	155	* 10 LARGEST KEPT
⑥	"	155	
⑦	"	149	
⑧	"	157	
⑨	"	147	
⑩	"	147	

Rest of white perch released.

Blue Gill (12 caught, 10 kept, see below) \*

①	Length =	157 mm	
②	"	163	
③	"	153	
④	"	146	
⑤	"	152	* 10 LARGEST KEPT
⑥	"	155	
⑦	"	164	
⑧	"	135	
⑨	"	132	
⑩	"	124	

Black Crappy (1 caught)

① Length = 196 mm  
Release rest of fish.

1430 Gary and Greg set 3 nets in creek.

1500 FINISHED SETTING THE NETS. CLEANING UP AREA, PACK EQUIPMENT AND LOAD BOAT.

1520 FINISHED PACKING UP, MOVING TO BEAVER POND

Continued on Page

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11/9/94  
Date

Kathy Amize  
Signed

11/

530 - ARRIVE AT BEAVER POND, PREPARING TO COLLECT FISH  
UPSTREAM OF BEAVER DAM. KATHY JENSEN, GARY AND GR.  
GO TO SHOCK FISH.

1615 - FINISHED SHOCKING AREA UPSTREAM OF BEAVER DAM. EVERYONE  
PROCESSING THE SAMPLES FOR THIS AREA. THE FOLLOWING W  
RECORDED FOR THE FISH:

BLACK CRAPPY (6 CAUGHT, 5 KEPT, SEE BELOW)

① LENGTH = 175 mm

② LENGTH = 193 mm

③ LENGTH = 184 mm

④ LENGTH = 162 mm

⑤ LENGTH = 190 mm

EEL (3 CAUGHT, 2 KEPT, SEE BELOW)

① LENGTH = 295 mm

② LENGTH = 265 mm

NOTE: ALSO QUITE A FEW BULLHEADS WERE CAUGHT BUT NONE  
WERE LARGE ENOUGH TO KEEP.

1630 - FINISHED PROCESSING FISH. PACKING UP EQUIPMENT/BOAT.

1645 - FINISHED PACKING UP. MOVING TO BUILDING 211.

1655 - EVERYONE AT BUILDING 211. UNLOADING EQUIPMENT/BOAT. <sup>MAY</sup> ~~WILL~~ OPEN  
SCENES IN BAY FOR BUILDING 211 TO DRY OUT. GREG AND GARY  
NOT TO.

1705 - ALL EQUIPMENT/BOAT UNLOADED.

1715 - EVERYONE OFFSITE FOR DAY.

*Cheryl*  
11/9/94

Continued on Page

Read and Understood By

*Cheryl*  
Signed

11/9/94  
Date

*Kathy Jensen*  
Signed

11/14/94  
Date

THURSDAY NOVEMBER 10, 1994

WEATHER: COLD, RAINY, HIGH IN THE 40'S. FORECAST FOR THE R. STOP IN THE MORNING BUT STAY COOL WITH A HIGH IN

0745 - CHRIS LONG ONSITE AT MAIN GATE

0750 - KATHY JANIGA ONSITE AT MAIN GATE

- GARY AND GREG (AQUATIC SYSTEMS, INC.) ONSITE AT MAIN GATE

0755 - MOVING TO PICK UP BOAT/EQUIPMENT.

0805 - HAVE ALL EQUIPMENT/BOAT, MOVING TO POND TO PULL NETS

0815 - SETTING UP EQUIPMENT AND LAUNCHING BOAT AT POND.

0820 GARY AND GREG MOVE OUT TO RETRIEVE NETS.

0825 - FIRST NET <sup>RETRIEVED</sup> ~~RETRIEVED~~ ON 11/10/94

0830 - SECOND NET RETRIEVED.

0835 - LAST NET RETRIEVED, GARY AND GREG COMING BACK TO SHORE TO PROCESS SAMPLES.

0840 - GARY AND GREG BACK AT SHORE, TAKING BOAT OUT OF WATER AND ORGANIZING EQUIPMENT.

0845 - BEGIN PROCESSING SAMPLES. THE FOLLOWING WAS RECORDED FOR CHANNA (CATFISH) (1 CAUGHT, 1 KEPT, SEE BELOW)

① LENGTH = 395 MM

WHITE PERCH (6 CAUGHT, 4 KEPT, SEE BELOW)

① LENGTH = 209 MM

② LENGTH = 211 MM

③ LENGTH = 225 MM

④ LENGTH = 230 MM

Continued on Page

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Signed

11/10/94  
Date

*Kathy Janiga*  
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11/10/94



0855 - ALTHOUGH WE ARE STILL SHORT 1 CATFISH, WE CANNOT ELECTROFISH DUE TO THE WEATHER; THEREFORE, WE CALL QUETZ FOR FISH SAMPLING AT THE POND.

0900 - MOVING TO MARUMSCO CREEK LOCATION

0905 - GARY AND GREGG SETTING UP EQUIPMENT AND LAUNCHING B UNDER FENCE.

0920 - FIRST NET RETRIEVED

0935 - SECOND NET RETRIEVED

0950 - LAST NET RETRIEVED. GARY AND GREGG LOADING BOAT AND AN TO PROCESS SAMPLES.

1000 - BEGIN PROCESSING SAMPLES. THE FOLLOWING WAS RECORDED FOR MARUMSCO CREEK:

YELLOW PERCH (7 CAUGHT, 7 KEPT, SEE BELOW)

(1) 206 mm

(2) LENGTH = 175 mm

(3) LENGTH = 230 mm

(4) LENGTH = 210 mm

(5) LENGTH = 190 mm

(6) LENGTH = 260 mm

(7) LENGTH = 245 mm

NOTE: ALTHOUGH THE 2 SMALLEST PERCH WERE LESS THAN 75% OF THE LENGTH OF THE LARGEST, WE KEPT THEM DUE TO THEM BEING DEAD.

COMMON CARP

(1) LENGTH = 520 mm

(2) LENGTH = 435 mm

1010 - ~~ALTHOUGH~~ <sup>ALL</sup> ALTHOUGH WE ARE SHORT ON SOME FISH SPECIES, WE MAY HAVE A LARGE ENOUGH VARIETY TO GET ADEQUATE SAMPLES.

Continued on Page

*Chf hy*  
Signed

11/10/94  
Date

Read and Understood By

*Kathy Jauriga*  
Signed

11/

1015 - MOVING TO AREA 22 DITCH. WE DISCUSSED THAT DUE TO THE WEATHER, ELECTROFISHING CAN NOT BE COMPLETED. WE WILL TRY TO SEINE UPSTREAM OF THE BEAVER DAM, TO PICK UP THE SEINE THEN GO TO AREA 22 DITCH.

1030 - EVERYONE ARRIVED AT AREA 22 DITCH @ BEAVER DAM. GARY AND GREG WILL TRY TO SEINE THE BEAVER DAM.

1130 - AFTER SEVERAL ATTEMPTS AT SEINING UPSTREAM OF THE DAM, NO CARP OR EEL WERE BEING CAUGHT, ONLY MORE CRAPPY AND THEREFORE, WE CALL IT QUITS. WE ORGANIZE THE EQUIPMENT & TO SURVIVORS 201/211 TO PICK UP THE OTHER BOAT AND REMAIN EQUIPMENT.

1140 - BACK AT BUILDING 201/211 ORGANIZING EQUIPMENT AND GREG AND PLAN ON CHANGING CLOTHS PRIOR TO LEAVING SINCE THEY BOTH DOWN UNDERWATER ABOVE THE TOPS OF THEIR WADERS.

1220 - FINISHED PACKING UP EQUIPMENT. MOVING TO MAIN GATE - AT MAIN GATE GARY AND GREG REPAIR COOLERS WITH

1230 - EVERYONE OFFSITE FOR DAY

*Chet Luy*  
11/10/94

Continued on

Read and Understood By

*Chet Luy*  
Signed

11/10/94  
Date

*Kathy J. Quinn*  
Signed

7

MONDAY NOVEMBER 21, 1994

WEATHER: COOL AND RAINING, HIGH IN THE 50'S. FORECAST THE RAIN TO STOP BUT GET COLD.

1300 - CHRIS LONG ONSITE AT MAIN GATE  
- IT'S POURING DOWN RAIN.

1340 - GARY AND GREG ONSITE AT MAIN GATE.  
- RAIN HAS SLOWED TO A DREZZLE.

1345 - MOVING TO PICK UP BOAT & EQUIPMENT

1355 - MOVING TO AREA IN FENCE NEAR LOCATION #3 TO  
IF WE CAN GET BOAT UNDER FENCE LIKE LAST TIME.

1400 - LOOKS AS IF WE CAN GET THE BOAT UNDER THE FENCE  
EVEN THOUGH THE TIDE IS HIGHER THAN PREVIOUS TIME.  
- GETTING EQUIPMENT READY.

1415 - GARY AND GREG LAUNCH THE BOAT AND ROW TOWARDS  
LOCATION #4. CHRIS LONG STAYS ONSHORE DUE TO B  
WEATHER.

1425 - GARY AND GREG ARRIVE AT LOCATION #4. LOVE ATT  
SNAG WAS CUT AT ABOUT 5' LENGTH. THEY FIND AN  
END BUT IT WAS ALSO CUT. GARY AND GREG IN TH  
LOOKING FOR BASKETS/ROPE.

1435 - GARY FINDS THE BASKETS. GARY AND GREG BRINGING  
TO SHORE FOR PROCESSING SAMPLES. GARY THEN GOES TO C  
WATER QUALITY SAMPLES/DATA WHILE GREG COLLECTS CLAMS.

1445 - BASKET A - 1 DEAD COLLECTED FOR SAMPLE  
(HAS TIE) 20 LOVE COLLECTED FOR SAMPLE  
BASKET B - 1 DEAD COLLECTED FOR SAMPLE  
(NO TIE) 20 LOVE COLLECTED FOR SAMPLE

Continued on Page

Chris Long  
Signed

11/21/94  
Date

Read and Understood By

Kathy [Signature]  
Signed

11/

1450 - GARY AND GREG RETIE BASKETS CLOSED, RETIE ROPE TO AND BASKETS AND TAKE BASKETS BACK OUT INTO BAY LOCATION #4.

1455 - MOVING TO LOCATION #3.

1500 - GARY AND GREG ARRIVE AT LOCATION #3 IN BOAT. CHRIS LONG STAYS ON SHORE. GARY RETRIEVING BASKETS.

1505 - GARY COLLECTING SAMPLES FROM BASKET A, GREG COLLECTING SAMPLES FROM BASKET B.

1510 - BASKET A - 1 DEAD COLLECTED FOR SAMPLE

(HAS TIE) 20 LIVE COLLECTED FOR SAMPLE

BASKET B - 1 DEAD COLLECTED FOR SAMPLE

(NO TIE) 20 LIVE COLLECTED FOR SAMPLE

- BASKETS RETIED CLOSED, THEN PLACED BACK IN WATER

- GARY COLLECTS WATER QUALITY SAMPLE / DATA.

1515 - GARY AND GREG BRINGING BOAT TO AREA WHERE THEY PULL THE BOAT OUT UNDER THE FENCE; AND PULL BOAT TRUCK PACKING UP EQUIPMENT AND LOADING BOAT.

1530 - MOVING TO BRIDGE OVER MARUMSCO CREEK

1540 - CHRIS LONG, GARY AND GREG ARRIVE AT BRIDGE OVER MARUMSCO CREEK

- GARY AND GREG LAUNCH BOAT AND GO TO RETRIEVE BASKET LOCATION #1

1545 - BASKETS RETRIEVED. GREG COLLECTING CLAM SAMPLES, GARY COLLECTING WATER QUALITY SAMPLES

1550 - BASKET A - 9 DEAD COLLECTED FOR SAMPLE

(HAS TIE) 2 LIVE COLLECTED AND COMBINED WITH BASKET B

BASKET B - 14 DEAD COLLECTED FOR SAMPLE LIVE CLAM

(NO TIE) 10 LIVE COLLECTED AND COMBINED

WITH BASKET A LIVE

Read and Understood By

*Chris Long*  
Signed

11/21/94

Date

*Kathy George*  
Signed

11/21/94

Continued on Page

550- (CONT.) NO CLAMS REMAINING AT THIS LOCATION. REMOVED BOTH BASKETS. GARY AND GREG DRAGGING BOAT BACK TO TRUCK.

555- BOAT LOADED BACK ONTO TRAILER. MOVING TO LOCATION #2. WE WILL WALK DOWN ALONG THE PATH BESIDE THE CREEK TO ACCESS LOCATION #2.

1605- WE ARRIVE AT LOCATION #2. GARY AND GREG WALK INTO THE CREEK TO RETRIEVE THE BASKETS.

1610- BASKETS ARE RETRIEVED AND BROUGHT TO SHORE. GREG COLLECTING SAMPLES FROM BASKET A, GARY COLLECTING WATER QUALITY SAMPLES / DATA AND BASKET B SAMPLES.

1615 - BASKET A - 4 DEAD COLLECTED FOR SAMPLE  
(HAS TIE) - 10 LIVE COLLECTED FOR SAMPLE (20 RET)  
BASKET B - 20 DEAD COLLECTED FOR SAMPLE  
(NO TIE) 20 LIVE COLLECTED FOR SAMPLE

1620 - BASKETS RETIED CLOSED AND GARY AND GREG TAKING BACK OUT INTO THE CREEK.  
- MOVING BACK TO TRUCK

1630 - BACK AT THE TRUCK ORGANIZING EQUIPMENT. <sup>11/21</sup>

1640 - MOVING TO DROP OFF BOATS BEHIND BUILDING 201.

1650 - AT BUILDING 201 DROPPING OFF BOATS.

1700 - EVERYONE OFFSITE FOR DAY

*Chris Ly*  
11/21/94

Continued on Page

*Chris Ly*  
Signed

11/21/94  
Date

Read and Understood By

*Kathy Jones*  
Signed

11/28  
D.



TUESDAY NOVEMBER 22, 1994

WEATHER: CLEAR, SUNNY, COOL, HIGH IN THE LOW 50'S. FORECAST  
THE SAME WARMING UP TO THE 60'S.

0750 - CHRIS, GREG, AND GARY ON SITE AT MAIN GATE  
- STANDING IN AND MOVING TO PICK UP BOATS AT BUILDING

0800 - GOT THE BOATS AND NOW MOVING TO TOMBSTONE LOCATION TO  
COLLECT CLAMS AT LOCATION #8

0805 - ARRIVE AT TOMBSTONE LOCATION, ORGANIZING EQUIPMENT  
AND CALIBRATING METERS

0820 - GARY RUNS OUT TO LOCATION #8 TO GET WATER QUALITY  
SAMPLES/DATA AND RETRIEVE THE BASKETS. CHRIS AND GREG  
WAIT ON SHORE WHERE WE WILL PROCESS SAMPLES.

0830 - GARY HAS BOTH BASKETS AND IS BRINGING THEM TO  
FOR PROCESSING. GREG PROCESSING SAMPLES FOR BASKET  
GARY PROCESSING SAMPLES FOR BASKET B

0835 - BASKET A - 0 DEAD  
(HAS 12) 20 LIVE COLLECTED FOR SAMPLE  
BASKET B - 1 DEAD COLLECTED FOR SAMPLE  
(NO DE) 20 LIVE COLLECTED FOR SAMPLE

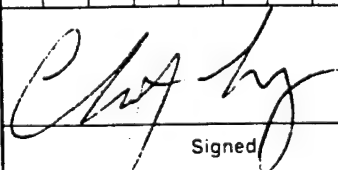
0840 - BASKETS RETIED CLOSED. GARY TAKING THEM BACK ON  
INTO THE WATER. THEN MEETS CHRIS AND GREG BACK  
THE TRUCK TO LOAD BOAT INTO TRAILER

0845 - BOAT LADED AND MOVING TO LOCATION #5

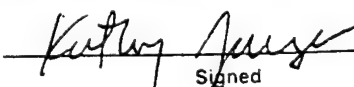
0850 - ARRIVE AT WELL HOUSE #1. ORGANIZING EQUIPMENT TO WALK  
LOCATION #5

Continued on Page

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Signed

11/22/94  
Date

  
Signed

11/

0855 - MOVING TO LOCATION #5

0900 - ARRIVE AT LOCATION #5. GARY COLLECTS WATER QUALITY SAMPLES THEN MOVES TO RETRIEVE BASKETS. GARY PROCESSING SAMPLES BOTH BASKETS.

0905 - BASKET A - 1 DEAD COLLECTED FOR SAMPLE  
(HASTE) - 20 LIVE COLLECTED FOR SAMPLE (23 REMAIN)  
BASKET B - 2 DEAD COLLECTED FOR SAMPLE  
(NO TIE) 20 LIVE COLLECTED FOR SAMPLE

0910 - GARY RETRES BASKETS CLOSED AND PLACE THEM BACK IN THE W.A.  
- MOVING BACK TO TRUCK.

0915 - BACK AT TRUCK. MOVING TO LOCATION #7 TO COLLECT WATER QUALITY DATA/SAMPLES FOR COMPLETENESS.

0920 - ARRIVE AT LOCATION #7. GARY AND GREG ORGANIZE EQUIPMENT THEN GO TO COLLECT WATER QUALITY DATA/SAMPLES.

0925 - WATER QUALITY DATA/SAMPLES HAVE BEEN COLLECTED FOR LOCATION MOVING TO LOCATION #6

0930 - ARRIVE AT THE BEAVER POND (LOCATION #6). GARY AND GREG COLLECTING WATER QUALITY SAMPLES/DATA AND ORGANIZING EQUIPMENT.

0935 - GARY AND GREG LAUNCH THE BOAT TO RETRIEVE THE BASKET

0938 - BASKET RETRIEVED AND GREG COLLECTING SAMPLES.

0940 - BASKET A NO LONGER AT LOCATION  
BASKET B - 15 DEAD COLLECTED FOR SAMPLE  
(NO TIE) 3 LIVE COLLECTED FOR SAMPLE  
- BASKET B REMOVED FROM LOCATION. NO CLAIMS REMAIN  
MOVING TO TRUCK.

Continued on Pa

Read and Understood By

*Chet by*  
Signed

11/22/94  
Date

*Kentley Jones* 11/  
Signed

0930 - BOAT LOADED BACK INTO TRAILER AND PULLED TO BUILDING 201 TO DROP OFF BOAT AND SHUCK DEAD CL

1000 - AT BUILDING 201 ORGANIZING EQUIPMENT/BOAT. PREPARED TO SHUCK DEAD CLAMS AND TITRATE WATER SAMPLES (GIR TITRATION; CRIES AND GIGG SHUCKING)

1030 - FINISHED TITRATING WATER SAMPLES AND SHUCKING DEAD CLAMS. THE FOLLOWING NUMBERS WERE COUNTED: (ISSUE COLLECTED - OTHERS EMPTY)

LOCATION	BASKET	NUMBER
1	A	7
1	B	7
2	A	4
2	B	20
3	A	0
3	B	0
4	A	0
4	B	1
5	A	0
5	B	2
6 <sup>4</sup> <sub>11/22/94</sub>	B	15
8	A	0
8	B	0

1030 - CLEANING UP AND PUTTING EQUIPMENT AWAY.

1040 - EVERYTHING CLEANED UP AND ALL EQUIPMENT PUT AWAY. EVERYONE LEAVES SITE FOR DAY

*Chaf by*  
11/22/94

Continued on Page

*Chaf by*  
Signed

11/22/94  
Date

Read and Understood By

*Kathryn*  
Signed

11/29/94  
Date



MONDAY DECEMBER 5, 1994

WEATHER: CLOUDY BUT CLEARING AND WARM. HIGH IN THE 60'S

1250 - CHRIS LONG ON SITE AT MAIN GATE

1315 - GARY AND GREG (AQUATEL SYSTEMS) ON SITE AT MAIN GATE  
- SIGN IN AND MOVE TO AREA IN FENCE NEAR LOCATION #1  
TO SEE IF WE CAN GET BOAT UNDER FENCE LIKE LAST TIME

1320 - MOVE TO GET BOAT AND COME BACK HERE BECAUSE  
CAN GET BOAT UNDER FENCE.

1335 - HAVE BOAT AND MOVING TO AREA IN FENCE NEAR LOCATION #2

1340 - AT AREA IN FENCE NEAR LOCATION #3 TO ACCESS CREEK  
FROM UNDER FENCE.

- GARY AND GREG ORGANIZING EQUIPMENT AND PREPARING  
LAUNCH BOAT.

1350 - ALL EQUIPMENT PACKED ON BOAT AND GARY AND GREG  
BOAT. CHRIS LONG TO STAY ON SHORE.

- MOVING TO LOCATION #4.

1355 - ARRIVE AT LOCATION #4. LINE ATTACHED TO SNAG CUT

- GARY AND GREG IN THE BAY LOOKING FOR ROPE/BASKETS

1400 - ROPE AND BASKETS FOUND. COLLECTING WATER SAMPLES AND BUREAU  
BASKETS TO SHORE FOR PROCESSING. GARY PROCESSING WATER  
SAMPLES/DATA, GREG RECOVERING REMAINING ROPE FROM SNAG.

1405 - THE WATER QUALITY SAMPLES/DATA HAS BEEN COLLECTED, AND ALL  
COLLECTED. GARY AND GREG TAKING BASKETS TO BOAT FOR PHOTOCOPY  
CLAM SAMPLES. BOAT WAS LEFT AT MOUTH OF MARSHALL CREEK  
TO LOW TIDE.

Continued on Page \_\_\_\_\_

Read and Understood By

*Chris Long*  
Signed

12/5/94

Date

*Kathy Murphree*  
Signed

12/9

1410 - BACK AT BOAT. BEGIN PROCESSING CLAM SAMPLES.

BASKET A - 0 DEAD COLLECTED FOR SAMPLE } 131 REMAINING  
(HAS TIE) 20 LIVE COLLECTED FOR SAMPLE }

BASKET B - 1 DEAD COLLECTED FOR SAMPLE } 126 REMAINING  
(NO TIE) 20 LIVE COLLECTED FOR SAMPLE }

\* NOTE: REMAINING CLAMS TO BE DRUMMED

1420 - FINISHED PROCESSING CLAM SAMPLES. GARY AND GREG ROWING IN MARSHES CREEK TOWARDS LOCATION #3.

1425 - GARY AND GREG ARRIVE AT LOCATION #3. GARY <sup>AND GREG</sup> COLLECTS QUALITY SAMPLES/DATA, THEN MOVE TO RETRIEVE BASKETS

1430 - BASKETS RETRIEVED. GARY AND GREG BRINGING THE BASKETS SHORE FOR PROCESSING.

1435 - BACK AT TRUCK PROCESSING CLAM SAMPLES

BASKET A - 0 DEAD COLLECTED FOR SAMPLE } 153 REMAINING  
(HAS TIE) 20 LIVE COLLECTED FOR SAMPLE }

BASKET B - 1 DEAD COLLECTED FOR SAMPLE } 154 REMAINING  
(NO TIE) 20 LIVE COLLECTED FOR SAMPLE }

\* NOTE: REMAINING CLAMS TO BE DRUMMED

1445 - FINISHED COLLECTING SAMPLES. CLEANING UP EQUIPMENT & BOAT ONTO TRAILER.

1455 - FINISHED LOADING EQUIPMENT AND BOAT. MOVING TO TRAILOR SITE TO DROP OFF REMAINING CLAMS INTO A DRUM. DROP OFF THE REMOVED BASKETS.

1505 - FINISHED DROPPING OFF CLAMS (WASTE CLAMS) AND REMOVED BASKETS. MOVING TO BEAVER POND (LOCATION #6) TO COLLECT WATER QUALITY SAMPLES/DATA.

1515 - AT BEAVER POND (LOCATION #6) COLLECTING WATER QUALITY

1520 - FINISHED COLLECTING THE WATER QUALITY DATA/SAMPLES AT LOCATION #6.

Continued on

Read and Understood By

Chris King  
Signed

12/5/94  
Date

Kathy Ann  
Signed

1520 (cont.)

- MOVING TO LOCATION #1 TO COLLECT WATER QUALITY DATA/SAMPLES

1525- ARRIVE AT LOCATION #1 AND COLLECTING WATER QUALITY DATA/SAMPLES

1530- FINISHED COLLECTING THE WATER QUALITY SAMPLES/DATA AT LOCATION #1  
- MOVING OUTSIDE THE FACILITY TO COLLECT SAMPLES FROM LOCATIONS #1 AND #2.

1535- ARRIVE AT BRIDGE OVER MARUMSCU CREEK. GARY AND GREG ORGANIZING EQUIPMENT. WE WILL WALK DOWN TO LOCATION #1 FIRST.

1540- MOVING TO LOCATION #2

1550- AT LOCATION #2. GARY AND GREG COLLECTING WATER QUALITY SAMPLES/DATA, THEN GO TO RETRIEVE BASKETS

1555- BASKETS BROUGHT TO SHORE, WE DECIDE TO CARRY THEM TO THE TRUCK TO PROCESS SAMPLES.

1610- BACK AT TRUCK. GREG GOES TO COLLECT WATER QUALITY SAMPLES FOR LOCATION #1. GARY ORGANIZING EQUIPMENT, THEN BEGINS TITRATE WATER SAMPLES

1615- CHRIS PROCESSING CLAM SAMPLES FROM BASKET A, GREG PROCESSING CLAM SAMPLES FROM BASKET B, LOCATION #2.

1620- LOCATION #2 CLAM SAMPLES.

BASKET A -	3 DEAD COLLECTED FOR SAMPLE	} 0 REMAIN
(HASTIE)	- 17 LIVE COLLECTED FOR SAMPLE	
BASKET B -	9 DEAD COLLECTED FOR SAMPLE	} 131 REMAIN
(NO TIE)	20 LIVE COLLECTED FOR SAMPLE	

\* NOTE: REMAINING CLAMS TO BE DUMPED AS WASTE.

1625- GREG HELPING GARY TITRATE WATER SAMPLES.

1645- FINISHED TITRATING WATER SAMPLES AND PACKING UP EQUIPMENT Continued on Page  
- EVALUATE OFFSITE FOR DATA.

Read and Understood By

Chris Ly  
Signed

12/5/94  
Date

Kathy Jurney  
Signed

12/8

PROJECT WOODBIDGE SE/RI

Continued From Page \_\_\_\_\_

TUESDAY : DECEMBER 6, 1994

WEATHER: FOGGY BUT FOG SHOULD CLEAR. HIGH IN THE SW  
FORECAST FOR TEMP. TO REACH 60'S

0755 - EVERYONE (CHRIS LONG, GARY, AND GREG) ON-SITE AT MAR:  
- GIVE IN AND MOVE TO PICK UP BOATS AT BUILDING 201.

0800 - BOATS / TRAILER HAILED INTO TRUCK, MOVING TO TOMBSTONE  
LOCATION TO SAMPLE AT LOCATION #8.

0805 - AT THE TOMBSTONE LOCATION. GARY AND GREG PREPARED  
EQUIPMENT AND CALIBRATING METERS.

0825 - ALL EQUIPMENT READY. GARY AND GREG LAUNCH BOAT.  
TO GO OUT IN BOAT TO GET WATER QUALITY SAMPLES,  
AND TO RETRIEVE BASKETS, THEN BRING BASKETS TO SHORE  
PROCESSING.

0835 - WATER QUALITY SAMPLES/DATA COLLECTED AND BASKETS RET  
GARY BRINGING BASKETS TO SHORE FOR PROCESSING. CHRIS  
SAMPLES FROM BASKET A, GREG PROCESSING SAMPLES FROM BASKET B.

0845 - BASKET A	-	0	DEAD COLLECTED FOR SAMPLE	} 70 REMAINING
(HAS ICE)		20	LEVE COLLECTED FOR SAMPLE	
BASKET B	-	1	DEAD COLLECTED FOR SAMPLE	} 36 REMAINING
(NO ICE)		20	LEVE COLLECTED FOR SAMPLE	

\* NOTE: REMAINING CLAMS TO BE DRUMMED AS VIA

- CLEANING UP AREA AND PACKING EQUIPMENT INTO TRUCK.

0850 - FINISHED CLEANING UP AREA AND PACKING EQUIPMENT  
- MOVING TO WAREHOUSE #1 TO WALK INTO LOCATION #5.

0855 - ARRIVE AT WAREHOUSE #1 AND ORGANIZING EQUIPMENT  
CARRY IN, THEN WE GO TO LOCATION #5.

0900 - ARRIVE AT LOCATION #5. GARY AND GREG COLLECT  
WATER QUALITY SAMPLES/DATA.

Continued on Pa

Read and Understood By

*Chris Long*  
Signed

12/6/94  
Date

*Kathleen Jones*  
Signed

12/

PROJECT WOODBRIDGE SE/RI

0905 - GARY GOES TO RETRIEVE BASKETS WHILE GREG FINISHES THE WATER QUALITY SAMPLING. ONCE THEY HAVE EVERYTHING, WE LEAVE THE TRUCK TO PROCESS SAMPLES THERE.

0910 - ARRIVE AT TRUCK AND BEGIN PROCESSING SAMPLES. CHRIS PROC. SAMPLES FROM BASKET A, GARY PROCESSING SAMPLES FROM BASKET B

0915 - BASKET A - 2 DEAD COLLECTED FOR SAMPLE } 0 REMAINING  
(HAG TIE) 21 LIVE COLLECTED FOR SAMPLE }  
BASKET B - 6 DEAD COLLECTED FOR SAMPLE } 93 REMAINING  
(HAG TIE) 20 LIVE COLLECTED FOR SAMPLE }

\* NOTE: REMAINING CLAMS TO BE DRUMMED AS

0920 - GARY AND GREG PACKING UP EQUIPMENT AND TRUCK. THEY DROP OFF BASKETS AT OLD JOB TRAILOR SITE THEN MEET CHRIS AT BUILDING 211 TO PROCESS DEAD CLAMS

0925 - EVERYONE AT BUILDING 211. GARY TITRATING WATER & GREG SHUCKING AND PROCESSING DEAD CLAMS

0940 - FINISHED SHUCKING AND PROCESSING DEAD CLAMS. THE FE NUMBERS WERE COUNTED: (TISSUE COLLECTED - OTHERS EMPTY)

LOCATION	BASKET	NUMBER
2	A	3
2	B	8
3	A	0
3	B	1
4	A	0
4	B	1
5	A	2
5	B	7
8	A	0
8	B	1

0940 - ALSO FINISHED TITRATING WATER SAMPLES. GARY AND GREG RE TRUCK AND BOATS DUE TO SAMPLING BEING COMPLETED.

Continued on Page

0955 - TRUCK AND BOAT PACKED. EVERYONE OFFSITE FOR DAY.

Read and Understood By

Chris Hy  
Signed

12/6/94  
Date

Kathy Jones  
Signed

12/8  
D

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# APPENDIX B

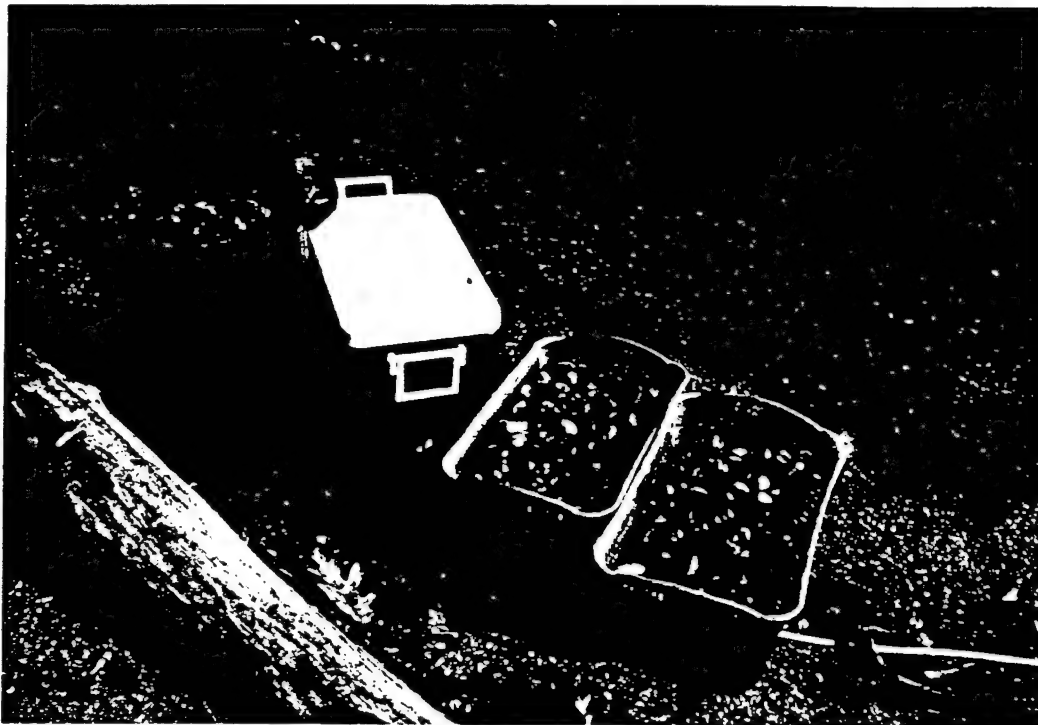
## PHOTO LOG

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October 9, 1994 Clams before distribution.



October 9, 1994 16 clam baskets at staging area.

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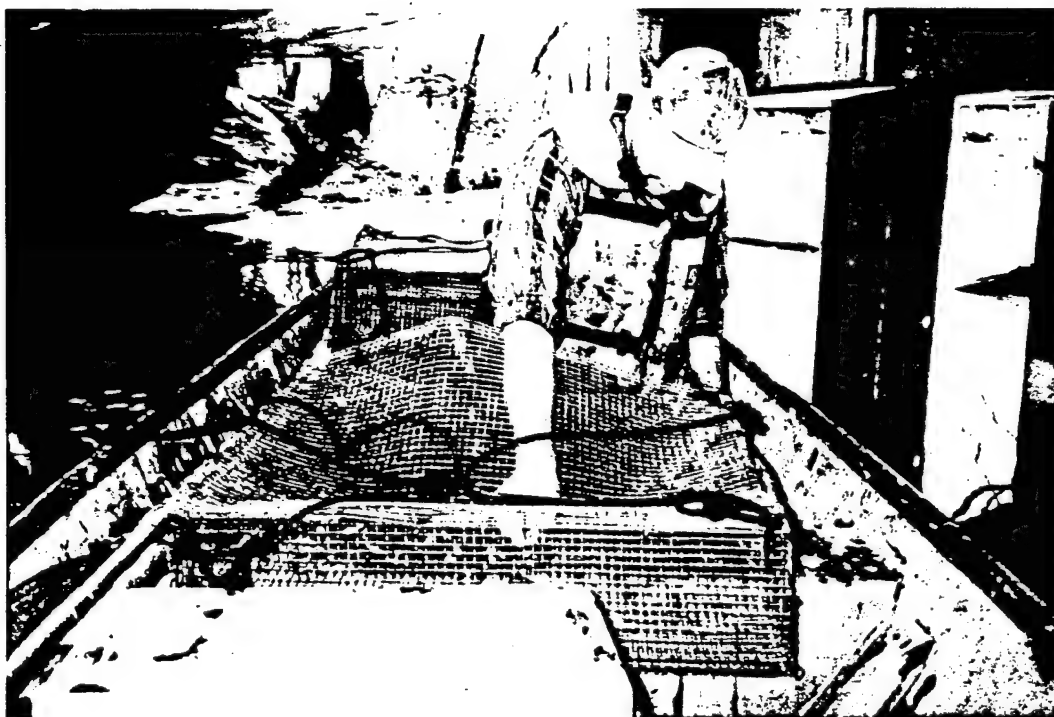
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November 7, 1994

Water quality samples collected at Location 1.



November 7, 1994

Clam sample collected at Location 1.

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November 7, 1994

Clam sample collected at Location 2.



October 9, 1994    Location 3 - Marumsco Creek near Landfill 2.

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October 9, 1994 Placing 2 clam baskets at Location 4.



October 9, 1994 Downstream of Location 5.

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November 7, 1994

Retrieving clam baskets for sampling at Location 5.



October 9, 1994    Placing 2 clam baskets at Location 6.

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October 9, 1994 Location 7 - Drainage Ditch upstream of the Main Compound.



October 24, 1994 Retrieving clam baskets for sampling at Location 8 (Belmont Bay approximately 150 feet from WRF).

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November 8, 1994

Fish collection at the pond using the seine net.



November 8, 1994

Checking the seine net for fish.

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November 8, 1994

Measuring the fish collected from the pond.



November 9, 1994

Retrieving the gill nets from the pond.

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November 8, 1994

Electrofishing in the drainage ditch from Location 5 to Location 6.



November 8, 1994

Fish caught with electrofishing.

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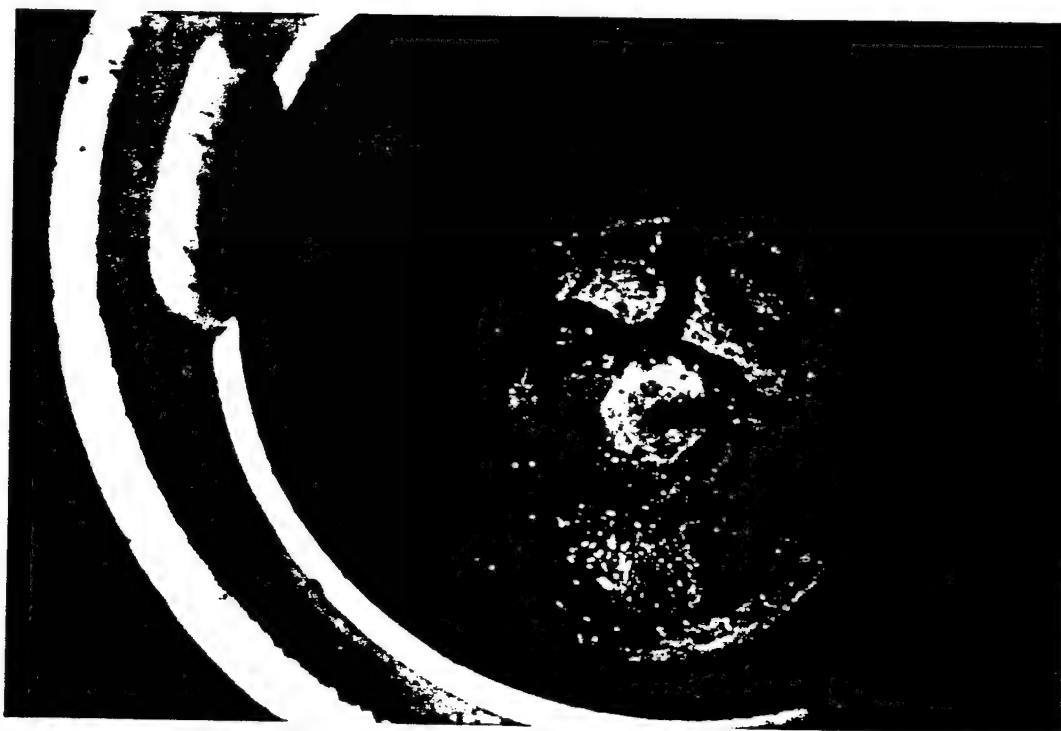
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November 8, 1994

Electrofishing in drainage ditch upstream of beaver dam.



November 8, 1994

8 eels caught in drainage ditch.

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November 9, 1994

Electrofishing in Marumsco Creek (near Location 3).



November 9, 1994

Gill net set overnight across Marumsco Creek.

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# APPENDIX C

## FISHING PERMIT

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# COMMONWEALTH of VIRGINIA

## Department of Game and Inland Fisheries

### SCIENTIFIC COLLECTION/SALVAGE PERMIT

October 31, 1994

Permit No. SCP94116

To whom it may concern:

Permission is granted to Jeffrey Briggs, Principal Permittee, and Gary J. Kenderes, Gregory M. Styborski, Michael F. Davison, Robert L. Shema, Christopher Long, Kevin McCreanor, Kathy Janiga, and Keith Schenkel, Sub-Permittees, of Earth Technology Corp., 1420 King Street, Suite 200, Alexandria, VA 22314, to collect freshwater fishes in the waters of the Woodbridge Research Facility, Prince William County, Virginia, with nets, seines, electro-fishing gear, and by hand for scientific purposes under the following special conditions:

1. No species currently listed by the U.S. Fish and Wildlife Service, or the Virginia Dept. of Game and Inland Fisheries, as threatened or endangered may be intentionally taken under this permit.
2. If incidental take of threatened or endangered species does occur, the permittee is required to notify this Department within five (5) working days of the species, location (county, quad), and number. More specific information (as specified in the reporting requirements) shall be given to the Department within ninety (90) days.
3. Any collections falling within waters defined by this Department as Endangered Species Waters must be coordinated through this Department (Nongame Aquatic staff, 703/552-6992). A sampling plan including stream names must be provided to this Department prior to any sampling.
4. If necessary, the permittee is authorized to take (remove) up to 5 individuals or 20% of the number of specimens (whichever is lower) of any species identified as "State Special Concern" except *Etheostoma osburni* (candy darter) at any collection location. The permittee is also authorized to take (remove) up to 10 individuals of any species not identified as endangered, threatened, or special concern at any collection location if necessary. Justification must be submitted to this Department for the taking (removal) of individuals in numbers greater than indicated above.
5. The permittee will, in advance, advise the State District Fisheries Biologist and the State Game Warden in the county of the date and location collection will be made. Contact must be made with the State District Fisheries biologist at least one week prior to sampling.
6. The permittee is required to submit to this Department a report of all specimens collected by July 31, 1995. This requirement also includes those specimens that were released after identification was made. Report format is attached. FAILURE TO RETURN THIS REPORT WILL RESULT IN NON-ISSUANCE OF FUTURE PERMITS. A negative report should be submitted if collections were not attempted or were unsuccessful.
7. This permit is issued with the understanding that no collections will be made on federal, state, or private property without the prior approval and necessary permits from the landowners involved.

Page 2

SCIENTIFIC COLLECTIONS/SALVAGE PERMIT Permit No. SCP94116

8. A valid Virginia fishing license is required for each person collecting samples by hook-and-line.

9. Sampling gear, boats, or trailers which have been used in states harboring zebra mussels must be cleaned and prepared following the guidelines specified in the attached summary prior to use in waters in the Commonwealth.

This permit expires June 30, 1995.



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Gary F. Martel  
Chief, Fisheries Division

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# **A P P E N D I X D**

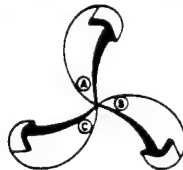
## **CHAIN-OF-CUSTODY FORMS**

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**AQUATIC  
SYSTEMS  
CORPORATION**



P.O. BOX 15390  
PITTSBURGH, PA 15237-0590  
FAX 412-766-7060  
412-367-1000

17 May 1995

Earth Tech  
1420 King Street  
Suite 600  
Alexandria, VA 22314

Attn: Mr. Kevin McCreanor

Subj: Shipment of Biota Samples to  
ESE Laboratory, Gainesville, FL  
Monday, May 15, 1995

Ref: Telephone Conversation  
May 15, 1995

Dear Mr. McCreanor:

This correspondence is to inform you that the biota samples collected at Woodbridge Research Facility in the fall of 1994 have been shipped to ESE Laboratory in Gainesville, Florida per your request. Six (6) coolers of biota samples (fish and mussels) were shipped overnight via Federal Express on May 15, 1995.

Enclosed please find a Copy of the Federal Express Airbill along with copies of the Chain-of-Custody forms which accompanied these biota samples.

If I can be of further assistance to you please do not hesitate to contact me.

Sincerely,

Gregory M. Styborski

GMS/gms

Enclosures

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USE THIS AIRBILL FOR SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.  
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U.S. LOCATIONS.  
QUESTIONS? CALL 800-238-5355 TOLL FREE.

AIRBILL  
PACKAGE  
TRACKING NUMBER

3771763796

4319N

3771763796 (1 of 6)

SENDER'S COPY

SHIPMENT'S FEDERAL EXPRESS ACCOUNT NUMBER 1367-2191-1		Date 5-15-95	
From (Your Name) Please Print Gregory M. Styborski		Your Phone Number (Very Important) 412-367-1000	
Company AQUATIC SYSTEMS CORPORATION		To (Recipient's Name) Please Print Mr. Dave Greer	
Street Address 80 UNION AVE		Company BSE Laboratory	
City PITTSBURGH PA		Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip Codes.) 14220 Newberry Road	
State PA		City Gainesville	
ZIP Required 15202		State FL	
ZIP Required 32607			
OUR INTERNAL BILLING REFERENCE INFORMATION (optional) (First 24 characters will appear on invoice.)			
IF HOLD AT FEDEX LOCATION, Print FEDEX Address Here			
Street Address			
City			
State			
ZIP Required			
PAYMENT <input type="checkbox"/> Bill Sender <input type="checkbox"/> Bill Recipient's FedEx Acct. No. <input type="checkbox"/> Bill 3rd Party FedEx Acct. No. <input type="checkbox"/> Bill Credit Card			
Exp. Date			
Acct./Credit Card No. 1172-8334-1			
SERVICES (Check only one box)			
DELIVERY AND SPECIAL HANDLING (Check services required)			
PACKAGES			
WEIGHT			
YOUR DECLARED VALUE			
SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY			
Federal Express Use:			
Base Charges			
Declared Value Charge			
Other 1			
Other 2			
Total Charges			
REVISION DATE 4/94			
PART #145412 WCSL			
FORMAT #180			
160			
© 1983-94 FEDEX			
PRINTED IN U.S.A.			



MULTIPLE PACKAGE  
SHIPMENT LABELS

SHIPMENT DATE	5/15/95
MASTER AIRBILL NUMBER	3771763796
2 of 6	8619700652
DESCRIPTION	
3 of 6	8619700661
DESCRIPTION	
4 of 6	8619700677
DESCRIPTION	
5 of 6	8619700686
DESCRIPTION	
6 of 6	8619700695

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# CHAIN OF CUSTODY RECORD

ICF KAUSER - PROJECT No. 6622000500

PLANT CODE	PROJECT NAME	NUMBER OF CONTAINERS
	WOODBRIER RESEARCH FACILITY	
SAMPLERS (Signature)	STYBORSKI, KENDERES, LONG	

STA. NO. DATE TIME

COAST

STATION LOCATION

SEE STATION COORDINATES MAP

1

10/24/94

TIME

COAST

STATION LOCATION

2

10/24/94

TIME

COAST

STATION LOCATION

3

10/24/94

TIME

COAST

STATION LOCATION

4

10/24/94

TIME

COAST

STATION LOCATION

5

10/25/94

TIME

COAST

STATION LOCATION

CONDUCTIVITY

REMARKS OR OBSERVATIONS

WEEK 2  
WEEK 4  
WEEK 6  
WEEK 8

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received for Laboratory by: (Signature)

Date

Time

Ice Chest Temp

°C

#

Ice Chest

Chain of Custody

Tag #

\*DISTRIBUTION: Original accompanies shipment; Copy to Coordinator Field Files.

Please Contact DIANE WISBECK OF ICF KAUSER  
FOR ANALYTICAL METHODS 410-612-6361

PAGE \_\_\_\_ OF \_\_\_\_



TF Karszer-Project No. 6622000500

PLANT CODE	PROJECT NAME	NUMBER
	WOODBRIAR Reservoir Facility	

SAMPLERS (Signature) SIXBOROKI, KENOERES, LONG OF CONTAINERS

STA. NO.	DATE	TIME	COMPAR	WE T L	STATION LOCATION
----------	------	------	--------	--------	------------------

1	11/7/94	SEE FIELD DATA SHEETS + COMMENTS
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2	"17/44"						

3	11/7/94			
---	---------	--	--	--

47	46/4/11
----	---------

10/2/11			
22/4/11	5		

[illegible]

1	10/1/17				
2	10/1/17				

[illegible]

--	--	--	--	--	--

[illegible][illegible][illegible][illegible][illegible]

Relinquished by: (Signature) <i>Debra M. Sargent</i>	Date 5-15-96	Time 1930	Received by: (Signature)
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Relinquished by: (Signature)	Date	Time	Received by: (Signature)
------------------------------	------	------	--------------------------

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)
------------------------------	------	------	---

[illegible]

DISTRIBUITION: Original accompanies shipment; Copy to Coordinator Field Files.

PLEASE CONTACT: VANCE WISBEN AT 410-612-1234  
E3 ANALYTICAL METHODS

10

[illegible]

All clowns removed from baskets before Weeks	11
--	----

**DISTRIBUTION:** Original accompanies shipment; Copy to Coordinator Field Files.

PLEASE CONTACT DIANE WISBECK OF ICF KARSER  
FOR ANALYTICAL METHODS 410-612-6361

# ICE KAISER - Project No. 662200500

PLANT CODE PROJECT NAME  
 WOODBRIDGE RESEARCH FACILITY

SAMPLERS (Signature) SNYDERSKI, KENDERES, LONG

NUMBER OF CONTAINERS

STA. NO. DATE TIME STATION LOCATION

SEE FIELD DATA SHEETS  
 RELOCATION MAP

1 11/21/94

2 11/21/94

3 11/21/94

4 11/21/94

5 11/22/94

6 11/22/94

7 N/A

8 11/22/94

0

WEEK 2  
 WEEK 4  
 WEEK 6  
 WEEK 8

CONDUCTIVITY

REMARKS OR OBSERVATIONS

PH

NO CLAM REMAINING  
 IN BASKET IN WEEK 6

Relinquished by: (Signature) RECEIVED M. SNYDERSKI Date 5-15-95 1730

Received by: (Signature) Relinquished by: (Signature) Date Time

Received by: (Signature) Relinquished by: (Signature) Date Time

Received by: (Signature) Relinquished by: (Signature) Date Time

Received for Laboratory by: (Signature) Date Time

Ice Chest Temp °C Ice Chest # Chain of Custody Tag #

DISTRIBUTION: Original accompanies shipment; Copy to Coordinator Field Files.

PLEASE CONTACT DWANE WISBECK OF ICE KAISER  
 FOR AVAILABLE MEMPHIS 410-612-6361

PAGE \_\_\_\_ OF \_\_\_\_

ILF KAISER Project No: 6622000500

PLANT CODE	PROJECT NAME
------------	--------------

PROJECT NAME  
Woodbridge Research Facility

**SAMPLE FRS**

STYBOESKI, KENDREES, LONG

Week	1	2	3	4	5	6	7	8
1								
2								
3								
4								
5								
6								
7								
8								

CONDUCTIVITY

REMARKS OR  
OBSERVATIONS

CHAIN OF CUSTODY RECORD									
ILF KAISER PROJECT No. 6622000500									
PLANT CODE		PROJECT NAME		NUMBER OF CONTAINERS					
SAMPLERS (Signature)		STYBORSKI, KENDERES, LONG		WOODBRIDGE RESEARCH FACILITY					
STA. NO.	DATE	TIME	STATION LOCATION	INITIAL	WEEK 2	WEEK 4	WEEK 6	WEEK 8	REMARKS OR OBSERVATIONS
1	N/A								NO CLAMS REMAINING IN SHEETS BY WEEK 8
2	12/5/94				X				
3	12/5/94				X				
4	12/5/94				X				
5	12/6/94				X				NO CLAMS REMAINING IN SHEETS BY WEEK 8
6	N/A				X				NO CLAMS REMAINING IN SHEETS BY WEEK 8
7	N/A				X				NO CLAMS REMAINING IN SHEETS BY WEEK 8
8	12/6/94				X				
CONTRACTOR	10/9/94				X				2 BAGS OF 20 CLAMS EACH RETAINED AT START OF STUDY
Relinquished by: (Signature)		Received by: (Signature)		Relinquished by: (Signature)		Received by: (Signature)			
Signature		Signature		Signature		Signature			
Relinquished by: (Signature)		Received by: (Signature)		Relinquished by: (Signature)		Received by: (Signature)			
Signature		Signature		Signature		Signature			
Relinquished by: (Signature)		Received by: (Signature)		Relinquished by: (Signature)		Received by: (Signature)			
Signature		Signature		Signature		Signature			

\*DISTRIBUTION: Original accompanies shipment; Copy to Coordinator Field Files.

PLEASE CONTACT DIANE WISBECK OF ILF KAISER FOR ANALYTICAL METHODS 410-612-6361

PAGE \_\_\_\_ OF \_\_\_\_

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PLEASE CONTACT DIANE WISBECK OF ICF KAISER  
FOR ANALYTICAL METHODS 410-612-6361

# CHAIN OF CUSTODY RECORD

ICF KAISER-PROJECT NO. 6122000500

PLANT CODE PROJECT NAME  
WOODBRIDGE RESEARCH FACILITY

SAMPLERS (Signature) STYBORSKI, KENDERES, LONG

TOTAL NUMBER OF CONTAINERS PER STATION

STA. NO. DATE TIME STATION LOCATION

9-POND 11-8 PM 10, MAY SEE FISH SAMPLING LOCATION MAP

10-CREEK 10-10 PM 10, MAY

11-WETLAND 11-10 PM 10, MAY

NO. FISH REC SPECIES

BLUEGILL CHANNEL CATFISH WHITE PERCH YELLOW PERCH COMMON CARP BLACK CRAPIE AMERICAN EEL

PH CONDUCTIVITY

REMARKS OR OBSERVATIONS

RELINQUISHED BY: (Signature) RECEIVED BY: (Signature)

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